OmniTrans
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PLANS AND PROGRAMS COMMITTEE MEETING

AGENDA

Wednesday, October 21, 2020 at 9:00 AM

Omnitrans, 1700 West 5th Street, San Bernardino, California 92411

VIRTUAL MEETING
This meeting is being conducted in accordance with Governor Newsom's Executive Orders N-25-20, N-29-20 and N-35-20

Join Zoom Meeting
https://omnitrans.zoom.us/j/89080353257
Meeting ID: 890 8035 3257

There will be no physical location for this meeting. Members of the public wishing to participate via teleconference, can do so by dialing the following number: 1 669-900-6833, Meeting ID:890 8035 3257. Interested persons who wish to make a public comment, may submit comments in writing to BoardSecretary@omnitrans.org. Comments must be submitted by Tuesday, October 20, 2020 at 5:00 p.m. Comments received will be read into the record.

Committee Members:

City of Chino Hills
Cynthia Moran

County of San Bernardino
2nd District
Janice Rutherford

City of Highland
Penny Lilburn

City of Loma Linda
Ron Dailey

City of Ontario
Alan Wapner

City of Rancho Cucamonga
Sam Spagnolo

City of Rialto
Deborah Robertson

The Board of Directors meeting facility is accessible to persons with disabilities. If assistive listening devices or other auxiliary aids or Limited English Proficiency services are needed in order to participate in the public meeting, requests should be made through the Board Secretary at least three (3) business days prior to the Board Meeting. The Board Secretary's telephone number is 909-379-7110 (voice) or 909-384-9351 (TTY). If you have comments about items on the agenda or other general concerns and are not able to attend the meeting, please mail them to Omnitrans at 1700 West Fifth Street, San Bernardino, California, Attention Board Secretary. Comments may also be submitted by email to BoardSecretary@omnitrans.org

PLANS AND PROGRAMS COMMITTEE AGENDA – Penny Lilburn, Chair
Wednesday, October 21, 2020 at 9:00 AM

ITEM	RECOMMENDATION
A. CALL TO ORDER	
1. Pledge of Allegiance	
2. Roll Call	
B. ANNOUNCEMENTS/PRESENTATIONS	
1. Next Committee Meeting: Wednesday January 20, 2021, 9:00 AM Omnitrans Metro Facility Board Room	
C. COMMUNICATIONS FROM THE PUBLIC	
This is the time and place for the general public to address the Board. In accordance with rules applicable to meetings of the Board of Directors, comments on items not on the agenda and on items on the agenda are to be limited to a total of three (3) minutes per individual.	
D. POSSIBLE CONFLICT OF INTEREST ISSUES	
1. Note agenda item contractors, subcontractors and agents, which may require member abstentions due to conflict of interest and financial interests. Board Member abstentions shall be stated under this item for recordation on the appropriate item.	
E. DISCUSSION ITEMS	
1. Plans & Programs Committee Minutes – July 22, 2020 - **Araceli Barajas**	**APPROVE**
2. Proposed 2021 Committee Meeting Schedule - **Erin Rogers**	**ADOPT**
3. Innovative Transit Review of the Metro-Valley - **Jeremiah Bryant**	**RECEIVE AND FORWARD**
4. ABBG Customer Satisfaction Survey of Omnitrans - **Victor Cuate**	**RECEIVE AND FORWARD**
5. Service Resumption Update - **Jeremiah Bryant**	**RECEIVE AND FORWARD**
6. CEO/General Manager's Report - **Erin Rogers**	**RECEIVE AND FILE**

F. REMARKS AND ANNOUNCEMENTS

G. ADJOURNMENT

OmniTrans
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1700 W. Fifth St.
San Bernardino, CA 92411
909-379-7100
www.omnitrans.org

Item #: E1

Plans and Programs Committee
July 22, 2020 Minutes

A. Call to Order

In accordance with Governor Newsom's Executive Orders N-25-20, N-29-20, and N-35-20, the July 22, 2020, Plans & Programs Committee Meeting was held via teleconference. Committee Chair Penny Lilburn called the meeting to order at 9:00 a.m.

1. Pledge of Allegiance
2. Roll Call

Committee Members Present
Mayor Pro-Tem Penny Lilburn, City of Highland – Committee Chair
Council Member Ron Dailey, City of Loma Linda
Mayor Deborah Robertson, City of Rialto
Supervisor Janice Rutherford, County of San Bernardino
Council Member Sam Spagnolo, City of Rancho Cucamonga
Council Member Alan Wapner, City of Ontario
Mayor John Dutrey, City of Montclair

Committee Members Not Present
Council Member Cynthia Moran, City of Chino Hills

Omnitrans Administrative Staff Present
Trischelle Baysden, Director of Rail
Shawn Brophy, Director of Operations
Jeremiah Bryant, Director of Strategic Development
Alex Chen, Director of Information Technology
Suzanne Pfeiffer, Director Human Resources
Nicole Ramos, Director of Marketing & Communications
Connie Raya, Director of Maintenance
Jerome Rogers, Director of Safety & Regulatory Compliance
Art Torres, Director of Procurement
Don Walker, Director of Finance
Aaron Moore, Deputy Director of Operations/STS
Melissa Castillo, Customer Service Manager
Victoria Chesney, Maintenance Manager
Victor Cuate, Service Planning Manager
Marcos Espinoza, Network Engineer

Jose Hernandez, Marketing Specialist
Anna Jaiswal, Development Planning Manager
Maurice Mansion, Treasury Manager
Max Shen, Web Designer
Teresa Villa, Contracts Manager

Legal Counsel
Steve DeBaun, Legal Counsel

B. Announcements/Presentations

There were no announcements.

C. Communication from the Public

There were no communications from the public.

D. Possible Conflict of Interest Issues

There were no Conflicts of Interest Issues.

E. Discussion Items

1. Approve Plans & Programs Committee Minutes – April 22, 2020

   M/S (Spagnolo/Dutrey) that approved Plans & Programs Committee Minutes – April 22, 2020. Roll call vote was taken and the motion passed unanimously by Members present.

2. Receive and Forward to the Board of Directors, COVID-19 Response Customer Survey Report

   Marketing Specialist, Jose Hernandez, provided a brief background on this item as detailed in the staff report.

   Member Robertson referred to the various methods in which the survey was promoted and asked which approach had the highest response rate. Mr. Hernandez responded that the highest response was received from the Token Transit App.

   Member Dutrey asked if a follow-up survey would be conducted. Mr. Hernandez responded that staff is discussing a second phase of the survey following the September service changes.

   Member Dutrey asked what the ridership percentage was like this week. Director of Strategic Development, Jeremiah Bryant responded that ridership has been steady for the past few weeks at approximately 13.5k passengers per week,

however; last week it dropped to 12.5K. Ridership remains down approximately 60%.

The Committee received and forwarded this item to the Board.
Member Dailey joined the meeting at 9:12 a.m.

3. Receive and Forward to the Board of Directors, West Valley Connector Project Update

   Development Planning Manager, Anna Jaiswal, provided a brief background on this item as detailed in the staff report.

   Member Robertson asked if vehicles smaller than the 40-foot buses are available for this project. Ms. Jaiswal responded that 25-foot cutaway vehicles used for certain programs such as OmniGo, however; based on the ridership projections, 40-foot buses meet the ridership capacity demand for this Project.

   The Committee received and forwarded this item to the Board.

4. Receive and Forward to the Board of Directors, Adopt-A-Stop Pilot Program Update and Recommend the Board of Directors Approve Continuation of the Program

   Development Planning Manager, Anna Jaiswal, provided a brief background on this item as detailed in the staff report.

   Member Wapner asked how the program was being monitored. He also asked if any of the volunteers used a contractor to provide the maintenance. Ms. Jaiswal explained that regular check-ins are scheduled with the volunteers and before and after pictures are provided, which are posted on social media. She stated that contracting services were made available to the participants, however there was a lack of interest possibly due to the costs.

   Member Dutrey asked that staff provide a list of Omnitrans bus stops in the City of Montclair available for the program.[1]

   Chair Lilburn and Member Rutherford thanked staff for their work on this project.

   M/S (Lilburn/Spagnolo) that recommended the Board of Directors approve continuation of the program. Roll call vote was taken and the motion passed unanimously by Members present.

[1] A list of available bus stops in the City of Montclair was provided to Vice Chair Dutrey following the meeting.

5. CEO/General Manager's Report

   Director of Strategic Development, Jeremiah Bryant reported the following items on behalf of the CEO/General Manager:

   - Board Member interviews are currently underway. The interviews focus on refining Omnitrans' Mission, Vision, and Values as well as discussing perceived strengths and challenges and long-term mobility needs within the community.
   - On July 9th, Ms. Rogers participated as a panel speaker on an APTA Webinar titled "COVID-19 IT Response-Lessons Learned, Best Practices & Innovations." The Omnitrans presentation was titled "Data-Driven Transit Decisions During COVID-19 Pandemic" and was received by 200+ industry peers.
   - This week, the first phase of Omnitrans' "Comeback Campaign" was launched. The first of three phases of the advertising campaign focus on Omnitrans' status as an essential service transporting essential workers and showcases our service as a safe and affordable option in these uncertain times. Future phases will continue to focus on economy as well as technological tools that enhance the customer experience Omnitrans' environmental benefits. The illustrations for our "Comeback Campaign" are in English and Spanish to provide 100% bilingual advertising in FY2021.

   Member Wapner commented on the Board Member interviews and requested that a scientific poll be conducted, noting the importance of community feedback. Mr. Bryant noted the request.

   Member Robertson had questions regarding the Comeback Campaign's launch and also regarding face coverings. Ms. Ramos stated that the campaign was launched on a softer level due to the COVID-19 pandemic and explained that the coach operators are equipped with extra masks for customers riding the buses.

E. REMARKS AND ANNOUNCEMENTS

There were no remarks or announcements

H. ADJOURNMENT

The Plans & Programs Committee meeting adjourned at 9:39 a.m. The next Committee Meeting is scheduled Wednesday, October 21, 2020 at 9:00 a.m., with location posted on the Omnitrans website and at Omnitrans' San Bernardino Metro Facility.

Prepared by:

_____

Araceli Barajas, Sr. Executive Asst. to the CEO
Clerk of the Board

Item #: E2

DATE: October 21, 2020

TO: Committee Chair Penny Lilburn and Members of the Plans and Programs Committee

FROM: Erin Rogers, CEO/General Manager

SUBJECT: **Proposed 2021 Committee Meeting Schedule**

Form Motion

Adopt the proposed Plans & Programs Committee Meeting Schedule for Calendar Year 2021. The Plans & Programs Committee meet on a quarterly basis beginning in January 2021 at 9:00 a.m.

January 20, 2021
April 21, 2021
July 21, 2021
October 20, 2021

ER:AB

Item #: E3

DATE: October 21, 2020

TO: Committee Chair Penny Lilburn and Members of the Plans and Programs Committee

THROUGH: Erin Rogers, CEO/General Manager

FROM: Jeremiah Bryant, Director of Strategic Development

SUBJECT: **Innovative Transit Review of the Metro-Valley**

Form Motion

Receive and forward to the Board of Directors the Innovative Transit Review of the Metro-Valley which is the final component of the SBCTA/Omnitrans Consolidation Study.

Background

As detailed at the November 2019 Omnitrans Board of Director's Meeting, the San Bernardino County Transportation Authority (SBCTA) awarded a contract to WSP USA, Inc. to complete the SBCTA and Omnitrans Consolidation Study and Innovative Transit Review of the Metro-Valley (Study). The SBCTA Board of Directors decided against consolidation at its September 2020 Board Meeting. The Omnitrans and SBCTA Boards received the final Consolidation Study reports at their October 2020 Board meetings.

The final element of this study is Task 3: Innovative Transit Review of the Metro-Valley. The final report and summary presentation are attached to this staff report.

The Study began before two key items that significantly impact the results of the Innovative Transit review:

- Omnitrans initiating, adopting and implementing the ConnectForward service plan which reduced service levels by 11% through several network changes and implemented the county's first MicroTransit service, OmniRide.
- COVID-19 pandemic which is significantly changing travel patterns and transit demand.

This has left the Innovative Transit Review with a difficult baseline service level to study. COVID emergency service levels are believed to be temporary, with some long-term effects; however, the duration and resumption paths remain unknown. The ConnectForward network has been in service for about a month and is impacted by COVID and has not matured enough to determine the success of the ConnectForward changes.

As a result, the Study focuses on several key areas to make recommendations:

1. Review of Innovative Solutions in Transit using nationwide examples, including Automated Vehicles, Connected Vehicles, Bike Share, Scooter Share, Car Share, MicroTransit, Ridehailing and Mobility as a Service
2. Pre-pandemic Service Characteristics and Performance Analysis
3. Travel Market Analysis

The results of these analysis show that SBCTA and Omnitrans have worked collaboratively to bring about multiple innovative transit projects and have implemented service changes inline with the market travel patterns and transit performance analysis. Examples of core innovative projects include moving forward on the West Valley Connector, Arrow, Ontario Airport Access Tunnel, and OmniRide MicroTransit Pilot. It's important to note that that while WSP looked into various types of automated vehicles as an option, it was not feasible due to the stage of the functionality/technology and the costs of implementing a pilot program.

In terms of traditional service performance, WSP's analysis validated many of the changes implemented by Omnitrans in the ConnectForward plan. Additionally, the report provides recommendations to consider additional service changes as the ConnectForward changes mature and performance can be evaluated. That said, WSP has several specific recommendations to improve efficiency or improve transit services that can be implemented in an incremental fashion over the next several years. Key areas of focus include:

- Implementing a Inter-valley Limited Stop Network
- Expansion of High-Frequency Local Network
- Mobility Hubs which bring traditional transit and new mobility service together
- Seven potential MicroTransit service areas to expand upon OmniRide Chino Hills
- Local route service changes

The proposed changes demonstrate a potential demand for additional transit services. Some of the recommendations require coordination among several agencies including cities and/or private companies where transit is already part of the system such as Ontario Mills. The impact of the recommended service changes provides additional mobility options, service to distribution centers, speedier service and enhanced neighborhood options. Collectively the proposed changes increase net annual operating costs by $8.4 million and require $46-76 million in capital expenditures. The breakdown of these additional costs is available in the report.

Based on the currently available transit funding within the Metro-Valley, Omnitrans and SBCTA will consider these proposals should additional funding become available. Additionally, Omnitrans will evaluate and include core elements in the upcoming Short-Range Transit Plan with some elements in the constrained plan and other in the unconstrained plan.

Conclusion

Receiving and forwarding this report completes this study allowing Omnitrans to implement relevant elements in the next Short-Range Transit Plan.

ER:JB

Attachments

A. PowerPoint Presentation
B. Innovative Transit Review of the Metro Valley

ATTACHMENT A

Consolidation Study and Innovative Transit Review

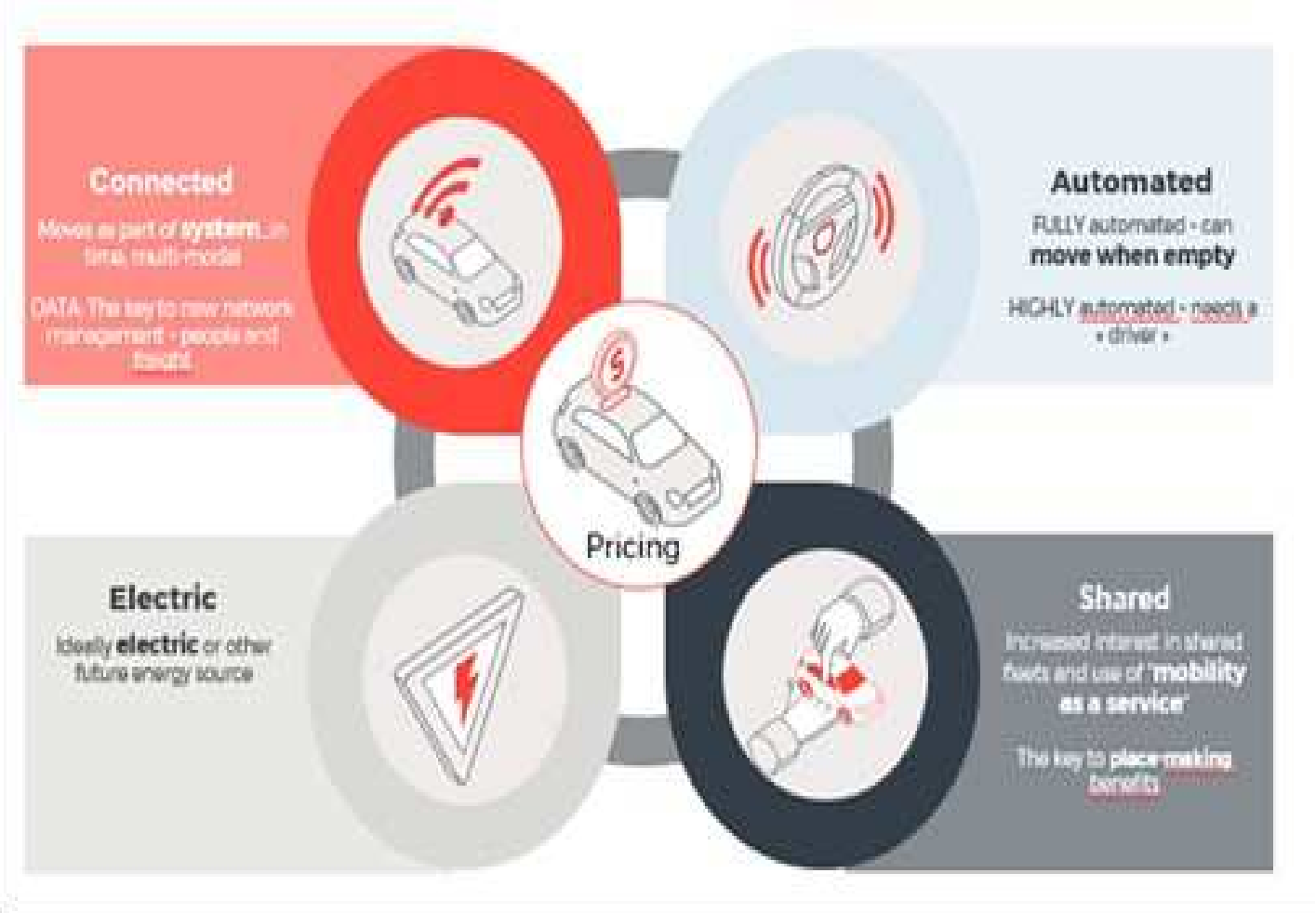
Innovative Transit Report and Summary of Options

San Bernardino County Transportation Authority

Presentation Overview

- Task 3 mobility innovations review
- Assessment of travel markets
- Service innovations
- Summary and matrix of options

Innovative Transit Dimensions



- Pricing is overarching dimension
- Automated Technology nascent now, could be deployed in late 2020s

Summary of Potential Transit Innovations

MODE	DESCRIPTION	DELIVERY MODEL	POTENTIAL OPPORTUNITIES
Bikeshare	Short term bike rental (usually for <1 hour) Membership options (daily to annual). Potential for better data.	Docked, dockless, electric-assist	First and last-mile access to transit stations in more dense regions. Better terms if done on a regional basis.
Scootershare	Short term scooter rental (<1 hour) Membership options (daily to annual). Potential for better data.	Dockless, but may be docked with third-party and software platforms.	Same First and last-mile access and Visibility Opportunities as Bikeshare. Better terms if done on a regional basis.
Carshare	Short term car rental, in fifteen minute to daily increments, with some companies providing membership options.	One-way, round trip, peer-to-peer	Guaranteed access at key transit stations. Create designated parking for carshare vehicles with easy station entrance access.
Ridehailing (Ridesourcing)	Customers use a mobile app to reserve and pay for rides, and to provide feedback. Riders may select the vehicle type/size they want. Customers may also split a ride and fare via app with other riders with different destinations.	Peer to peer, on-demand.	Non-emergency medical transport in place of paratransit, first and last mile for select populations.

Potential Transit Innovations, cont.

MODE	DESCRIPTION	DELIVERY MODEL	POTENTIAL OPPORTUNITIES
Automated Vehicles	Various levels (0 = no automation) to (5 = fully driverless)	Individual vehicles, transit buses, shuttles, fleets.	Testing and education, automated vehicle pilots, early policy setting.
Connected Vehicles	Communication between vehicles, users, and infrastructure for safety/environment/efficiency.	Various	Safety and efficiency improvements for transit systems and corridors
Microtransit	Flexible or fixed route, demand-responsive shared ride options booked, and paid for via mobile app or other tech., e.g. OmniRide.	Fixed-route, flexible route, demand-responsive.	Enhance existing transit through first/last-mile and late-night services, replace low performing routes for savings.
Mobility as a Service (MaaS), Mobility on Demand (MOD)	Grouping various forms of mobility services, including public and private ones, into a single platform for customers in a single format. Omnitrans has partnered with Transit App and Token Transit to begin coordination with other public operators via a private tech partnership.	Multiple delivery modes, including transit, vanpools and shared small vehicles, but generally using a software platform.	Enhance the existing transit system, improve user experience, work toward integration across various mobility options. Allows for seamless payment systems across public and private transportation systems.

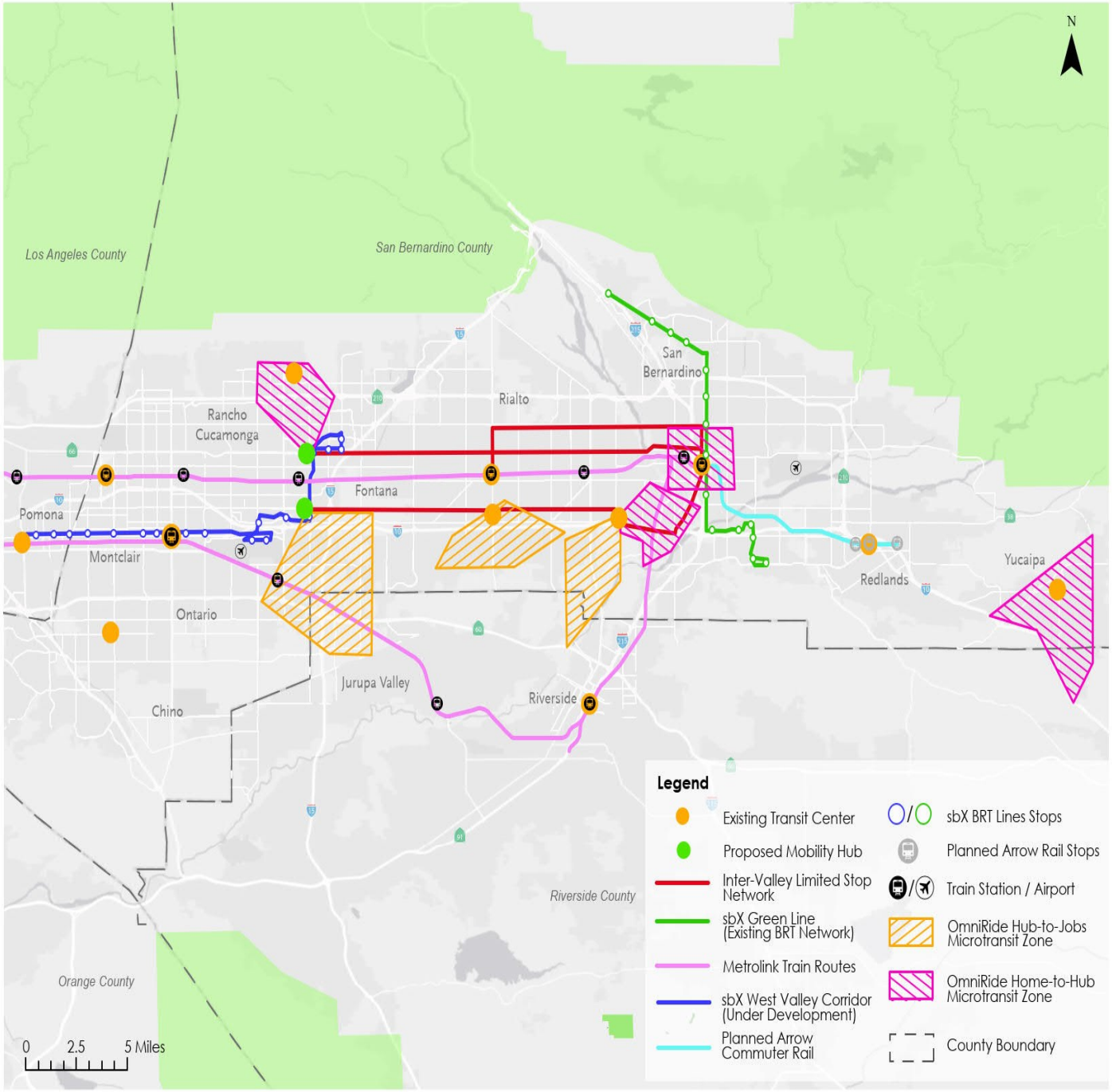
Underserved Transit Markets

O/D Pairs with transit potential

- **San Bernardino-Rancho Cucamonga:** opportunity to explore high capacity transit, mobility hubs and microtransit and micromobility services
- **Pomona-Montclair:** opportunity to explore stop optimization and transit priority treatments to increase speeds – **in progress with West Valley Connector BRT**
- **Rancho Cucamonga-Ontario:** has similar opportunities with San Bernardino-Rancho Cucamonga **– also part of West Valley Connector BRT**
- **Rialto-Fontana:** has similar opportunities with San Bernardino-Rancho Cucamonga
- **San Bernardino-Colton:** opportunity to review the route and the layover to increase the speed
- **Colton:** strong internal potential transit market, could be served well with a mobility hub and microtransit
- **San Bernardino:** strongest opportunity in the region to develop a key mobility hub, micromobility and microtransit
- **Large distribution centers:** key destinations for off-peak trips, opportunity for focused transit services, especially to serve the second and overnight shift jobs

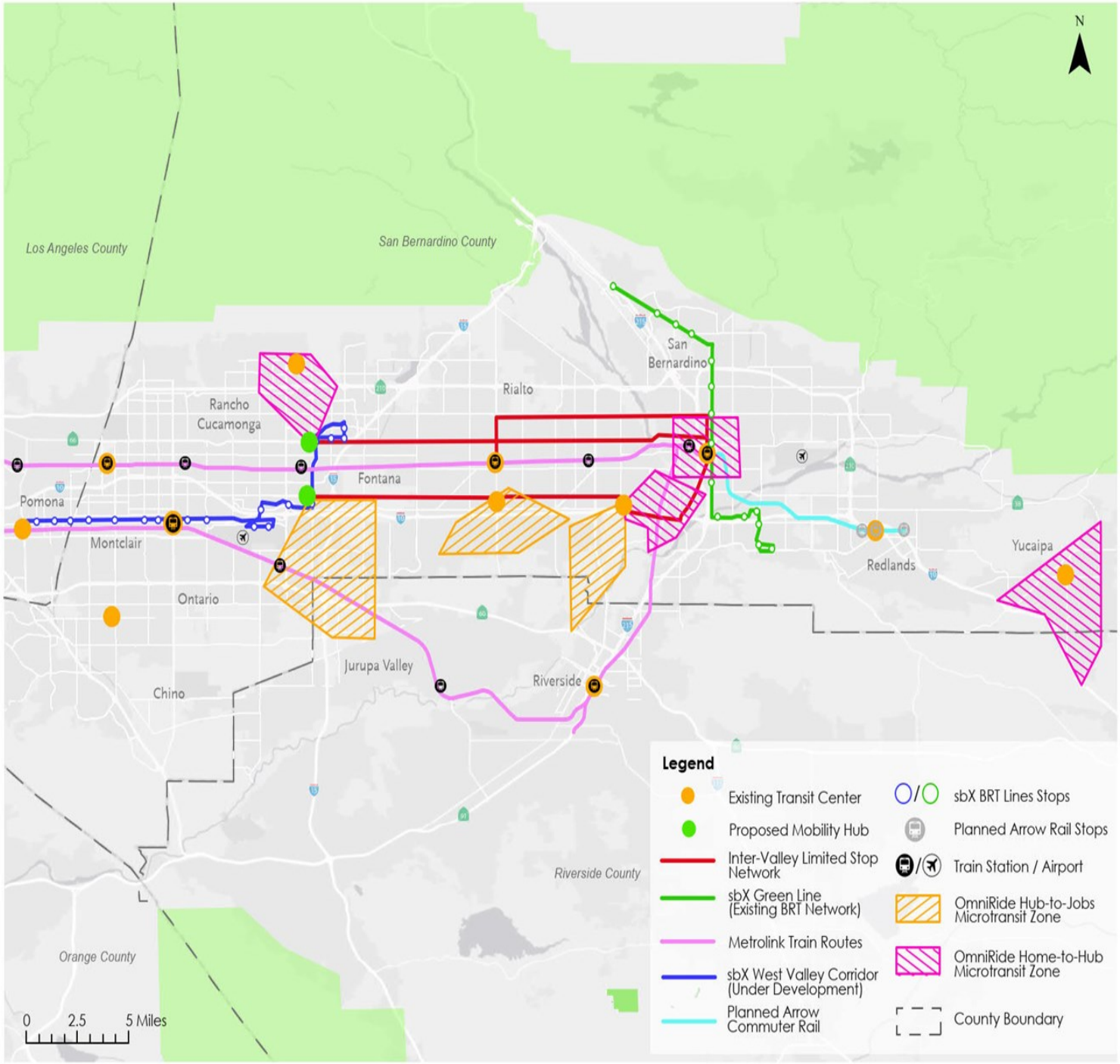
New Metro-Valley Service Concepts

- Overlay network of Inter-Valley routes, limited stops, <20% faster
- Three routes connecting East Valley and West Valley, enhance links between sbX and WVC BRTs
- Two additional high frequency local bus routes
- Two "mobility hubs" at 2 key WVC stations



New Service Concepts, continued

- 7 new microtransit zones to focus on connections to transit centers and difficult to access job sites.
- More efficient use of dedicated lanes and route design to better connect the SBTC with jobs in DTSB
- Broadened ride hailing and vehicle sharing at stations



Bikeshare, Scootershare, Carshare

All involve partnerships with private providers

- Bikeshare/Scootershare options: short-term, partnership models, “docked” systems work better for transit riders
- Carshare: Certainty of curb space needed near transit stations

Expand OmniRide Microtransit Services

—Seven more zones proposed:

- Home to Hub zones in Colton, Yucaipa, N. Rancho Cucamonga and San Bernardino
- Hub to Jobs zones in Ontario, Fontana and Bloomington-Colton

- Improved connections to high-capacity and rail services

Mobility Hubs At BRT Stations

—Two smaller mobility hubs proposed:

- Ontario Mills Mall, City of Ontario
- Foothill Boulevard and Milliken Avenue, Rancho Cucamonga

- Larger Mobility Hub With Enhanced Range of Microtransit and Micromobility services for Downtown San Bernardino

New Service Concepts Summary

CONCEPT	SERVICE / FACILITY	SERVICE SPAN	FREQUENCY	ADDITIONAL PEAK BUSES	ADDITIONAL ANNUAL OPERATING COST	EXISTING SERVICE REDUCTION	NET ANNUAL OPERATING COST	CAPITAL COST (if new ZEBs)
Inter-Valley Limited Stop Network	Foothill	5:00a-11:00p	30 min	9	$2,705,832	n/a	$2,705,832	$11,000,000
	San Bernardino Ave	5:00a-11:00p	30 min	8	$2,987,946	$524,270 (reduce Rt 61 service by 1 bus)	$2,463,676	$10,000,000
	Sierra-Baseline	5:00a-11:00p	60 min	6	$1,813,590	n/a	$1,813,590	8,000,000
Additional Higher Frequency Routes	8	5:00a-10:00p	35 min	1	$502,656	n/a	$502,656	$2,000,000
	215	5:00a-10:00p	15 min	0	$246,290	n/a	$246,290	0
Mobility Hubs	Ontario Mills	n/a	n/a	n/a	n/a	n/a	n/a	$5 - $15 m
	Rancho Cucamonga	n/a	n/a	n/a	n/a	n/a	n/a	$5 - $15 m

- Range of costs and service increases
- Intended to be a menu

New Service Concepts, Continued

CONCEPT	SERVICE/ FACILITY	SERVICE SPAN	FREQUENCY	ADDITIONAL PEAK BUSES	ADDITIONAL ANNUAL OPERATING COST	EXISTING SERVICE REDUCTION	NET ANNUAL OPERATING COST	CAPITAL COST (incl. new ZEBs)
OmniRide Microtransit	Colton Home-to-Hub	6:00a-8:00p	On-demand	2	$321,000	$192,000 (savings by streamling alignment in Colton)	$129,000	Lease through contract
	Yucaipa Home-to-Hub	6:00a-8:00p	On-demand	3	$643,000	$405,000 (elimination of Rt 319)	$238,000	Lease through contract
	N. Rancho Cucamonga Home-to-Hub	6:00a-8:00p	On-demand	3	$643,000	$872,000 (delete Rt 85 north of Rancho Cucamonga mobility hub)	-$229,000	Lease through contract
	San Bernardino Core Home-to-Hub	6:00a-8:00p	On-demand	2	$321,000	$736,000 (streamling local alignments within zone)	-$415,000	Lease through contract
	Ontario Hub-to-Jobs		On-demand	5	$1,285,000	$1,089,000 (shorten Rt 82 south of Ontario Mills Mall)	$196,000	Lease through contract
	Fontana Hub-to-Jobs		On-demand	3	$643,000	$402,000 (eliminate Rt 329)	$241.000	Lease through contract
	Bloomington-Colton Home-to-Jobs		On-demand	2	$321,000	n/a	$321,000	Lease through contract

New Service Concepts, Continued

CONCEPT	SERVICE / FACILITY	SERVICE SPAN	FREQUENCY	ADDITIONAL PEAK BUSES	ADDITIONAL ANNUAL OPERATING COST	EXISTING SERVICE REDUCTION	NET ANNUAL OPERATING COST	CAPITAL COST
Downtown San Bernardino	Consolidated Routes-Access to Jobs	No change	No change	n/a	n/a	n/a	n/a	n/a
Innovative Mobility	Ridehailing	n/a	On-demand	n/a	n/a	n/a	$200,000 (full time coordinator)	n/a
	Vehicle Sharing	n/a	On-demand	n/a	n/a	n/a		$5 - $15 m (for modifications to existing transit/transfer centers to accommodate carshare)
Grand Total If All Services Implemented							**$8.4 million**	**$46-$76 million**

- Possible O&M and capital cost savings from route consolidation
- Some O&M and capital costs associated with innovative mobility partnerships

Innovative Transit Review Summary

- Consolidation Study:
  - **September Board Meeting: Board decided to not consolidate based on limited duplication, significant risk and no significant savings**
- Innovative Transit Study:
  - Provided new technology scenarios for consideration
  - Report shows demand for additional Transit Service
  - Current economic/financial condition do not allow for additional services to be deployed at this time
  - Report generally validates Omnitrans ConnectForward service changes
  - **Can use this report for refinements based on ConnectForward results**
  - **Report recommendations will be considered in development of the upcoming Omnitrans SRTP.**

sbcta
San Bernardino County Transportation Authority

wsp

Thank You

ATTACHMENT B

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

CONSOLIDATION STUDY AND INNOVATIVE TRANSIT REVIEW

TASK 3—INNOVATIVE TRANSIT ANALYSIS AND CONCEPTS

OCTOBER 1, 2020

CONSOLIDATION STUDY AND INNOVATIVE TRANSIT REVIEW

TASK 3—INNOVATIVE TRANSIT ANALYSIS AND CONCEPTS

SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY

SUBMITTAL (VERSION 2.0)

PROJECT NO.: 12771C70, TASK NO. 3 202012771C70, TASK NO. 3 2020
DATE: OCTOBER 1, 2020

WSP
SUITE 350
862 E. HOSPITALITY LANE
SAN BERNARDINO, CA 92408

TEL.: +1 909 888-1106
FAX: +1 909 889-1884
WSP.COM

October 1, 2020

Beatriz Valdez, Director of Special Projects and Strategic Initiatives
San Bernardino County Transportation Authority
1170 W. Third Street, 1st Floor
San Bernardino, CA 92410

Dear Ms.Valdez:

Client ref.: Contract No. C14086, CTO No. 70 Contract No. C14086, CTO No. 70

WSP is pleased to submit this Draft Task 3 Innovative Service Analysis and Concepts Report as part of the Consolidation Study and Innovative Transit Review. Upon receipt of comments from SBCTA and your partners, we will prepare and submit a final version of this report.

Yours sincerely,

Cliff Henke
AVP/Project Leader, Global ZEB/BRT
Coordinator

XX/xx
Encl.
cc:
WSP ref.: 12771C70, Task No. 3 202012771C70, Task No. 3 2020

Suite 350
862 E. Hospitality Lane
San Bernardino, CA 92408

Tel.: +1 909 888-1106
Fax: +1 909 889-1884
wsp.com

QUALITY MANAGEMENT

	FIRST ISSUE	TECHNICAL REVIEW	QAQC REVIEW	BACKCHECK AND REVISION	APPROVAL FOR RELEASE
Prepared by		TR	JH	JH/TM	CH
Date		09/01/2020	09/02/2020	09/02/2020	09/02/2020

	SECOND ISSUE	TECHNICAL REVIEW	QAQC REVIEW	BACKCHECK AND REVISION	APPROVAL FOR RELEASE
Prepared by		JH	SH	RM	TR
Date		10/01/2020	09/22/2020	09/22/2020	10/01/2020

SIGNATURES

PREPARED BY

Name, Designation
Title

REVIEWED BY

Name, Designation
Title

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PRODUCTION TEAM

CLIENT

Director of Special Projects and Strategic Initiatives, SBCTA	Beatriz Valdez
Transit Manager, Transit and Rail Programs, SBCTA	Nancy Strickert
Director of Strategic Development, Omnitrans	Jeremiah Bryant

WSP

Project Manager	Cliff Henke
Innovative Transit Review Lead	Tim Reynolds
Innovative Services Specialist	Sahar Shirazi
Transit Propensity and Origin-Destination Specialist	Seth Torma
Senior Planning Analyst	Tim Rosenberger
Data and Performance Analyst	Tiyani Zhang
Quality Assurance and Control	John Heaton

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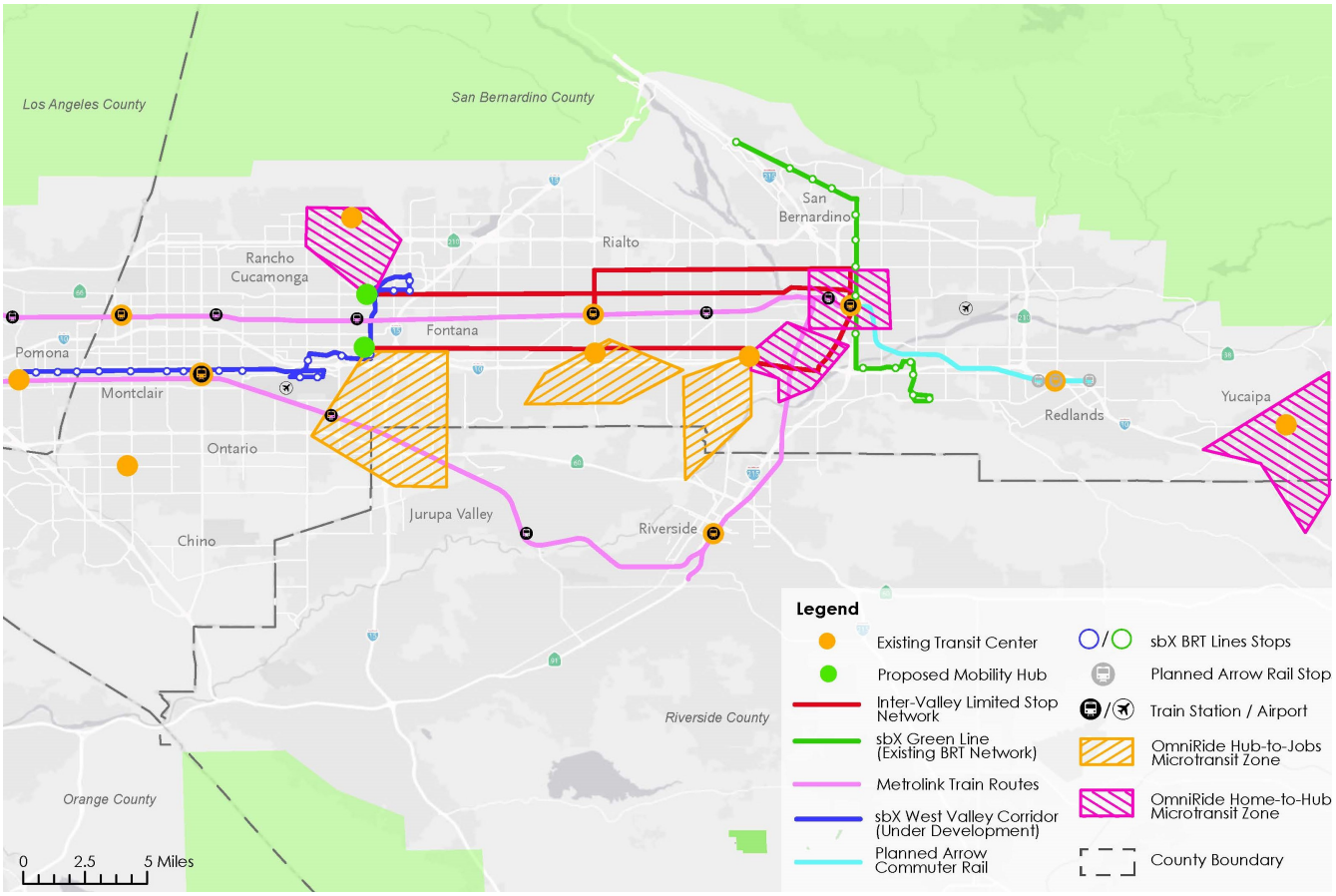
1.1 OVERVIEW

Efforts to improve the productivity and cost effectiveness of the transit services operated by the various transit agencies in the Metro-Valley portion of San Bernardino County fall, in part, on the San Bernardino County Transportation Authority (SBCTA), which coordinates and facilitates transportation planning. With this Task 3 Report, prepared as part of the Consolidation Study and Innovative Transit Review, an analysis of system performance and travel markets indicates several opportunities to provide alternative and innovative services to better serve residents and workers, as shown below.



Innovative transit applications include a wide spectrum of modes, services and technologies that range from microtransit pilot programs to automated and connected vehicles. Bike/car/scooter-sharing, ride-hailing, and the concept of Mobility as a Service (MaaS) are among the programs and techniques that go beyond standard, traditional fixed route service to retain existing transit users and attract new riders.

Innovative transit is often associated with autonomous (or automated) vehicles (AV). While numerous efforts and considerable strides have been made to develop AV applications for transit, current programs are still in the experimental, small-scale stage in relatively controlled environments. It will be several years before AV will demonstrate the level of safety, availability, and capital and operational cost effectiveness to allow Omnitrans and other Metro-Valley service providers to implement full AV technology in general transit operations and in mixed traffic.

While less technologically ambitious, various steps toward more flexible and innovative services can be made. Omnitrans, for example, has already implemented an innovative service design with the implementation of the OmniRide microtransit service in Chino Hills. It has developed a Bus Rapid Transit (BRT) line (sbX) and is embarking on a second BRT line - West Valley Connector (WVC). To expand the commuter rail service provided by Metrolink (operated by the Southern California Regional Rail Authority), SBCTA is currently developing the Arrow/Redlands Passenger Rail Project using advanced technology.

The concepts described in this report have been developed in the context of budget challenges that both pre-dated the pandemic that took hold in early 2020 - many of the routes operating in the Metro-Valley had been experiencing a downward ridership trend – and occurred as a result of the pandemic.

As a result, the concepts focus on efficiency and passenger convenience. They include:

- An overlay network of Inter-Valley routes, with limited stops and travel times at least 20 percent faster than current local service. Three of these routes would connect homes and jobs in the East Valley and West Valley and provide an effective link between the sbX and WVC BRT lines.
- Two additional high frequency local bus routes.
- Two “mobility hubs” designed to accommodate first/last mile travel at two key WVC BRT stations.
- Seven new on-demand, microtransit zones designed to focus on connecting residents to transit centers and transit riders to difficult-to-access job sites.
- More efficient use of dedicated lanes and route design to better connect the San Bernardino Transit Center (SBTC) with jobs in downtown San Bernardino.
- Accommodation of broadened application of ride hailing and vehicle sharing opportunities at transit stations.

It is anticipated that depending on budget conditions, the concepts can be implemented incrementally before 2030. The impact of the recommended service changes provides additional mobility options, service to distrubition centers, speedier service, and enhanced neighborhood options. Collectively, the proposed changes over the implementation period, if all were adopted, will increase net annual operating costs by $8.4 million and required $46-$76 million in capital expenditures.

2 INTRODUCTION

This review of innovative transit services is designed to respond to, and anticipate, changes in travel demand needs in the Metro-Valley area. Available data (including population, employment centers, travel patterns, ridership, and system performance) is used to determine the potential for two different but potentially complementary changes in the transit system - an optimal fixed route, high-frequency network combined with alternative, innovative services in lower demand areas to help support the network. These two changes are also analyzed in terms of improving integration with the components of the Metro-Valley's high capacity transit network, including existing bus and rail lines (sbX and Metrolink) and those currently under-development (WVC and the Arrow/Redlands rail service).

Ridership trends in the Metro-Valley area have been down in recent years. While reflecting national trends since the recovery of the Great Recession took hold in the previous decade, ridership loss in San Bernardino County has included a 31 percent drop in ridership between 2013 and 2018. These trends have, in part, prompted the conduct of this study and of Task 3 in particular. They have also prompted the enactment of substantial cuts in Omnitrans service, scheduled for September 2020.

The SBCTA Consolidation Study and Innovative Transit Review were initiated in December 2019. Subsequently, the transit operating environment changed profoundly in ways that were impossible to foresee at the outset of the study. The pandemic, which began to take hold in March 2020 and has continued through the duration of the work on Task 3, not only led to a historic plunge in ridership and decrease in service provided, it has prompted a global discussion on and concern for the future of public transit. While it is similarly impossible to predict how travel patterns and mode share trends will be changed in the long-term, many transportation experts agree that travel demand, especially work trips, will be quite different. In addition, the pandemic has exacerbated the financial conditions and outlook of most transit systems. Therefore, this task has been conducted mindful of current and probable future budget challenges and the need to reduce operating costs.

This Task 3 report presents an overview and discussion of innovative transit services and programs from across the transit industry, followed by an analysis of existing conditions in terms of system performance and characteristics along with an examination of regional travel patterns and areas of transit propensity. The analysis tasks were designed to identify correlations among characteristics to identify areas with potential for high-frequency connections and/or alternative, innovative service delivery. Using these results, recommendations were developed to better respond to identified conditions and expand upon the recent changes implemented by Omnitrans under its ConnectForward initiative, as well as collaborative efforts between SBCTA and Omnitrans such as WVC.

Several recommendations will be included in Omnitrans' forthcoming Short-Range Transit Plan. Omnitrans and SBCTA will consider the recommendations depending, in large part, on available funding, which is difficult to predict given the 2020 pandemic. However, it may be possible to implement components in this decade, with additional high frequency local service starting in 2021; new Inter-Valley limited stop routes placed into service starting in 2022; and a network of microtransit zones brought online over the course of the next eight years. Two recommended mobility hubs, as capital projects that may require site assembly would have a longer timeframe. Autonomous technologies, which exhibit potential for application on microtransit and BRT service, are not expected to be available or affordable within this decade.

2.1 INNOVATIVE TRANSIT WORKING GROUP

As part of the Task Three Review, an Innovative Transit Review Working Group was created, composed of representatives of SBCTA and the transit operators in San Bernardino County. The participants of the working group are listed in alphabetical order in Table 1. To date, two sessions were held virtually on May 27 and July 6, 2020.

Table 1: SBCTA Innovative Transit Review Working Group

PARTICIPANT	REPRESENTING
Sandy Benson	Mountain Area Regional Transit Authority (MARTA)
Shawn Brophy	Omnitrans
Jeremiah Bryant	Omnitrans
Elizabeth Cate	MARTA
Mark Goodale	Morongo Basin Transit Authority (MBTA)
Kevin Kane	Victor Valley Transit Authority (VVTA)
Ginger Koblasz	SBCTA
Erin Rogers	Omnitrans
Carrie Schindler	SBCTA
Rebekah Soto	SBCTA
Nancy Strickert	SBCTA
Beatriz Valdez	SBCTA
Donald Walker	Omnitrans

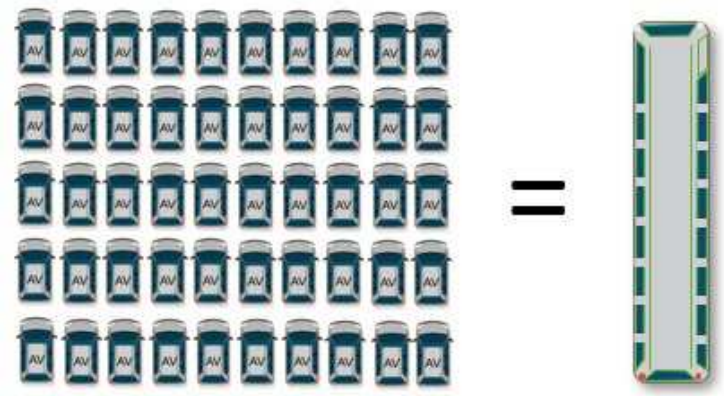
3 INNOVATIVE SOLUTIONS IN TRANSIT

3.1 BACKGROUND

The general classification of mobility innovation is made up of five pillars (Figure 1): shared, electric, automated, connected, and pricing. There are potential opportunities for each pillar, but with some of the technologies facing longer than anticipated timeframes and challenges, shared mobility presents the most immediate potential opportunities for transit agencies and mobility providers.

Figure 1: Five Pillars of Mobility Innovation

Nationally, car ownership rates decreased in the years following the launch of transportation network companies (TNC). There has been some recent shift in this trend, especially in urban areas, but according to United States Census data, car-free households are increasing, and some people are opting out of owning a car, especially new drivers. This is not to say that people are opting out of driving or riding in cars, and private vehicle purchases were increasing slightly in some regions before COVID. Ridership on public transportation has been declining as well, on a national level and in parts of San Bernardino County, even prior to the pandemic. While some providers, including Sound Transit in Seattle and the Victor Valley Transit Authority (VVTA) in San Bernardino County, had been experiencing ridership increases due to service enhancements and changes, ridership across most transit agencies had been on the decline since 2012. The emergence of TNCs presented an attractive alternative for many who could not or chose not to drive, and transportation behavior began to shift. In addition to causing revenue concerns among transit agencies, the consequences of this shift are far-reaching – affecting equity, access, congestion, and environmental sustainability. This has been recognized by SBCTA with its Lyft program designed to enhance service to Ontario International Airport.



Public transit, the original shared mobility option, is still the most efficient way to carry large numbers of riders along busy corridors. However, innovative mobility options can fill gaps, address shifts in behavior and expectations, and create a holistic transportation system.

To accomplish such a system, innovation must serve as a tool to help support and enhance a strong transit system. Identifying challenges and opportunities first, to determine outcome-driven solutions, can address gaps in the system. The five transit systems that serve San Bernardino County each face slightly different needs based

on the population they serve, the geography of their region, and the density of their service area. Locally and regionally, there are opportunities to create a more connected, seamless system that offers flexibility and choice.

Transportation technology continues to evolve rapidly, creating potential solutions for existing transportation issues. Whether it be automation promising enhanced safety, electrification promising improved air quality, or on-demand services promising more convenient access, the landscape of innovation is shifting, not just transportation behavior, but also expectations. This chapter of the Task 3 report examines the current state of emerging mobility, the potential for short- and long-term benefits, and use cases for various technologies.

3.2 POTENTIAL INNOVATIONS

Table 2 describes services and programs for consideration in San Bernardino County.

Table 2: Summary of Potential Transit Innovations

MODE	DESCRIPTION	SERVICE DELIVERY MODEL	POTENTIAL OPPORTUNITIES FOR SBCTA, TRANSIT OPERATORS AND CITIES
Automated Vehicles	Various levels (0 being no automation and 5 being fully autonomous) of automated functionality, allowing human drivers to reduce or eliminate interaction with the operation of the vehicle	Individual vehicles, transit vehicles, shuttles, fleets.	Testing and education through an automated vehicle pilot, early framework and policy setting.
Connected Vehicles	Communication between vehicles, users, and infrastructure to enhance safety, environment, and efficiency through detection, response, and notification systems.	Various	Safety and efficiency improvements for transit systems and corridors.
Bikeshare (also referred to as micromobility)	Short term bike rental, usually for periods of an hour or less, with membership options from daily to annually. Potential for collection and use of real-time location data (O/D)	Docked, dockless, electric-assist, traditional, accessible.	First and last-mile access to transit stations in more dense regions. Visibility creates awareness of non-single occupant vehicle (SOV) alternatives.
Scootershare (also referred to as micromobility)	Short-term scooter rental, usually for individual periods of an hour or less, with membership options from daily to annually. Potential for collection and use of real-time location data.	Dockless, but may be docked with third-party docks and software platforms.	First and last-mile access to transit stations in more dense regions. Visibility creates awareness of non-SOV alternatives.
Carshare	Short term car rental, in 15-minute to daily increments, with some companies providing membership options.	One-way, round trip, peer-to-peer	Guaranteed access at key transit stations through shared infrastructure. Create designated parking for carshare vehicles with easy access to the station entrance.

MODE	DESCRIPTION	SERVICE DELIVERY MODEL	POTENTIAL OPPORTUNITIES FOR SBCTA, TRANSIT OPERATORS AND CITIES
Microtransit	Flexible or fixed route, demand-responsive shared ride options booked, and paid for via mobile app or other tech. Vehicles can range from large SUVs to vans and shuttle buses but are generally smaller than traditional transit vehicles	Fixed-route, flexible route, demand-responsive.	Enhance existing transit through first and last-mile connections and late-night service, replace low performing routes for cost savings. Flexible routes allow for autonomy and mimic existing non-revenue service.
Ridehailing (also known as Ridesourcing)	Use of online platforms to connect passengers with drivers. Customers use a mobile app and reserve and pay for a ride, as well as to provide feedback. Riders may select the vehicle type/size they want to book. Customers may also split a ride with other riders whose destination is different than the driver's. If selected, ride splitting is conducted via the mobile app as well.	Peer to peer, on-demand.	Non-emergency medical transport in place of paratransit, first and last mile for select populations.
Mobility as a Service (MaaS), Mobility on Demand (MOD)	A grouping of various forms of mobility services, including public and private services, into a single platform accessible to customers in a streamlined format. Various levels of MaaS exist, but full integration includes trip planning, booking, and payment integration across modes, creating a seamless experience for users.	Multiple delivery models, but including transit, vanpools and shared small vehicles, but generally utilizing a software platform.	Enhance the existing transit system, improve user experience, work toward integration across various mobility options. Allows for seamless payment systems across public and private transportation systems.

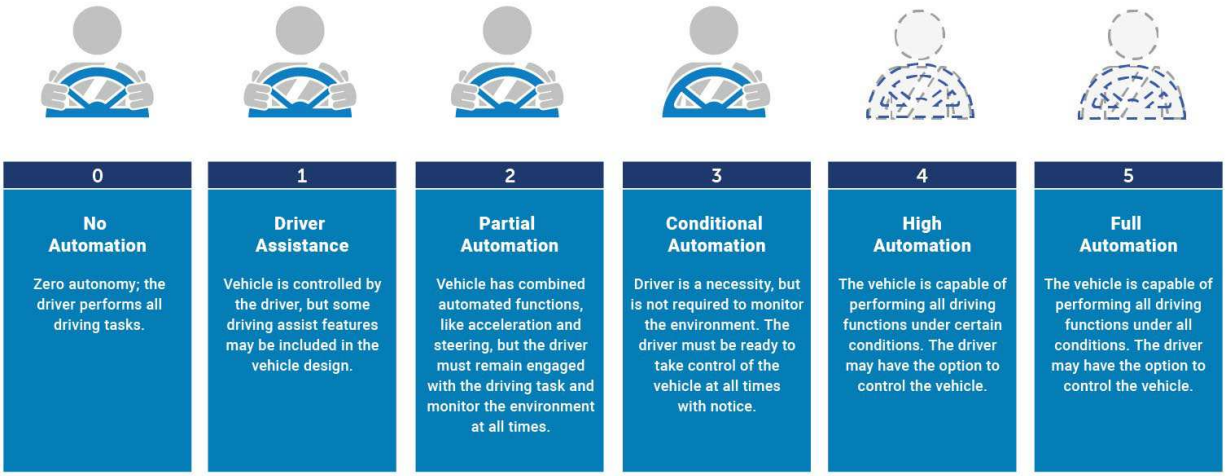
3.2.1 STATE OF THE INDUSTRY

AUTONOMOUS VEHICLES: LONG-TERM, HIGH EFFORT

The National Highway Traffic Safety Administration states that 94 percent of vehicle crashes are due to human error and that automated technologies such as dynamic brake support are already improving vehicle safety. As AV technology advances, the number of automated functions that the vehicle can perform without active controls or monitoring will also increase.

Despite much research and development in recent years, AV development must make significant strides in innovation and research. The Society of Automotive Engineers (SAE) defines automation in terms of six different, increasingly progressive levels, as shown in Figure 2, with Level 0 representing fully manual control (no automation) and Level 5 representing full operation (manual not required but optional).

Figure 2: Levels of Automation



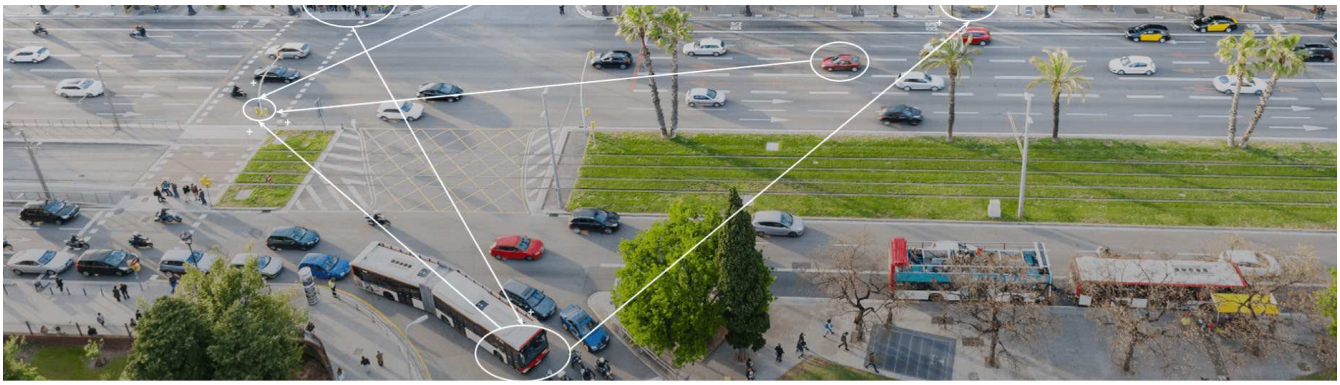
Source: https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety

However, while much discussion has been reported around fully driverless vehicles, current technology does not support the fully automated model. Level 2 automation is already widely available, but level 4 and 5 automation - where the human driver is only marginally or not at all involved in the vehicle's function - are not available with current technology in 2020. The reasons for this lag in the timeline vary - road conditions, weather issues, and lack of clarity in policy and regulations have created a patchwork of pilot programs around the nation, mostly with automated vehicle shuttles. The technology itself is also evolving, as lidar cameras used in place of humans learn to work in various conditions. Currently, even as shuttles and vehicles are tested on streets, they are often monitored or run by remote drivers. Public demonstrations and pilots are generally in closed campus settings, as interaction with other vehicles and even debris can cause confusion and reaction from vehicles. For example, in Salt Lake City, Utah, the Utah Transit Authority (UTA) and the Utah Department of Transportation launched an automated shuttle, as a demonstration pilot in 2019, to familiarize various stakeholders and the public with the technology. The vehicle had an operator on board to take control as needed, and it operated on closed roads without interaction in mixed traffic. The vehicle was generally well-received by the public. However, various challenges were uncovered for addressing future pilots. Incidents such as sudden stops due to the vehicle detecting debris invisible to the humans on-board have created challenges for potential expansion of the program.

Due to the limitations of technology, private companies such as Waymo and Cruise that are currently testing vehicles on public roads will not likely deploy automated vehicles for many years. Some speculation has considered automation for commercial vehicle fleets, including transit, before the automation of private vehicles. While this is possible, the first automated bus system launched, the Connecticut Department of Transportation New Flyer, is Level 4 technology and requires a safety operator on board for the foreseeable future.

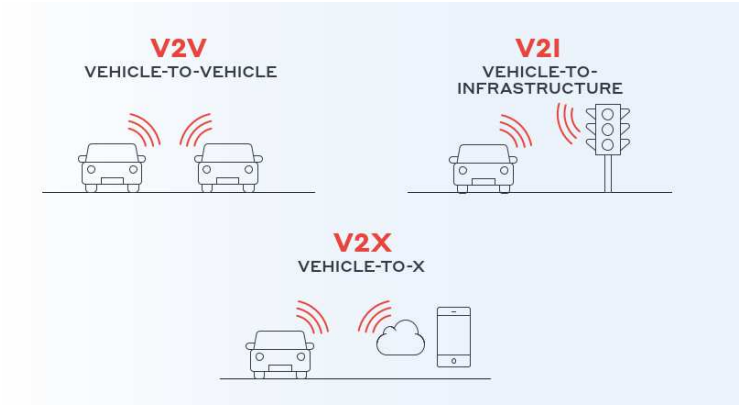
While full automation is not yet ready for large scale, mixed traffic use, creating a framework and base system for automation will help public agencies and jurisdictions implement automation systematically once the technology becomes widely adopted. Testing use cases, piloting vehicles, and creating policy and regulatory frameworks for future automation must include flexibility, as the technology itself rapidly changes.

CONNECTED VEHICLES: SHORT-TERM, MEDIUM EFFORT



Connected Vehicle (CV) technologies refer to radio technologies that link vehicles to one another (V2V), other roadway systems users (V2X), and to the road structure itself (V2I), in order to exchange information for safety enhancement, capacity and efficiency improvements, and potential environmental benefits. The basic types of vehicle connectivity are illustrated in Figure 3. Connectivity relies on peer to peer communications and low latency to enable active safety applications, and potentially reduce up to 80 percent of crashes outside of driver impairment. Most CV systems rely on Dedicated Short Range Communications (DSRC), although competitor technologies such as 5G are being tested and deployed in various regions. The ultimate goal is to equip all users of the mobility system, including active transportation, transit, and private vehicles, with a common, interoperable technology that enables the exchange of data regarding location, speed, heading, acceleration, and other factors collectively referred to as Basic Safety Messages (BSM). By combining this data with roadside data such as traffic signal timing, vehicles can register safety threats and communicate them with users in order to take action. Such communications can range from red-light warnings or reduced speed warnings to eco lanes management for emissions reduction.

Figure 3: Basic Types of Vehicle Connectivity



Connected vehicles do not utilize lidar technology, as automated vehicles do. There is no guarantee that AVs will also be connected, as there is debate in the industry as to whether such enhancements should be required. However, connected corridors are being piloted and tested across the country, with potential implications for transit including safety and improved reliability.

MICROMOBILITY (BIKESHARE AND SCOOTERS): SHORT-TERM, LOW EFFORT

Docked bikeshare programs have proven popular around the nation for over a decade, increasing active transportation usage and enhancing access to transit via first and last-mile connections. Early analysis found that bikeshare worked best with large rollouts, utilizing as many bikes as possible, and ensuring access between transit stations and residential communities. As electric scooters and dockless bikeshare models - including traditional and electric bikes - began to emerge, cities faced issues with permits, data, and safety concerns. Early analysis of various systems suggests that usage of docked and dockless systems is different. While dockless vehicles are often used for short trips or tourism/leisure, docked systems are utilized more by commuters, and for longer distances. The difference may be in the security of knowing availability and location, the buy-in of membership models for docked systems, and/or the variance in users themselves.

Unfortunately, many micromobility systems are rapidly shifting their business models or removing their services entirely. Despite the popularity of the services, revenue concerns have shifted the focus for various private companies.

Source: https://commons.wikimedia.org/wiki/File:Capital_Bikeshare_Washington_DC_Bicycle_Rental_14326445924.jpg

As the 2020 pandemic hit cities and affected travel choices, an initial reduction in bike and scooter share - up to 60 percent less rides in some cities - caused financial panic at some of the private providers. Uber, for example, scrapped thousands of their Jump electric bikes and Lime pulled scooters from 99 percent of the cities in which they operated. These private companies were already operating at the margins - Uber has famously never turned a profit, for example - and thus made rapid decisions to retain revenue. Public backlash from removing bikeshare and scootershare demonstrated the popularity of such systems, and ridership increased as the pandemic flared longer and longer. In April, for example, Citibike usage in New York dropped by 60 percent but bounced back by 40 percent a month later. Uber sold the Jump bike system to Lime, and cities are slowly seeing the return of vehicles, in smaller numbers, onto their streets. Docked and dockless micromobility services remain popular among users, and many have returned to cities after initially shutting down during the pandemic. They have generally returned more cautiously, with a limited number of vehicles and promises for more depending on ridership, as companies mitigate risks around profitability.

As car traffic begins to return to cities and corridors, micromobility provides a potential opportunity to reduce congestion and incentivize active transportation. Additionally, as transit services resume, micromobility will remain a strong first/last mile connector for many transit riders. The rapid change in services during the pandemic demonstrates the volatility of the market for private providers and the need to establish set boundaries, requirements, permits, and programs for micromobility services. Cities such as San Francisco, New York, and Washington, DC, where long standing contracts and regulations around bikeshare existed, were not threatened by the loss of providers. Cities such as Sacramento, however, were subject to removal of services and limited return, determined by the private provider. In establishing micromobility systems in a region, a strong partnership with clear parameters and requirements will help ensure that these popular services, which provide connections and alternatives for many non SOV drivers, remain as options despite short term market challenges.

Therefore, docked and dockless micromobility services may still serve as first/last-mile solutions for moderately dense areas, especially for those outside the catchment zone of transit stops. Micromobility systems are generally administered through partnerships between individual cities and private providers, through permits, fees, data sharing, and evaluation built into agreements (permits). Some regions, such as the San Francisco Bay Area, manage bikeshare through their metropolitan planning agency (Metropolitan Transportation Commission) in collaboration with the cities.

CARSHARE: SHORT-TERM, MEDIUM EFFORT

Carsharing companies such as Zipcar or Getaround allow users to benefit from right-sized, on-demand vehicle ownership without the investment of purchasing a vehicle, the need to store it, or the need to maintain it. Each trip the user takes includes the total cost of the vehicle for the time it is used, such as insurance, fuel, and wear-and-tear. Carshare may enhance access to mobility for those without vehicles, but also incentivize households to shed personal vehicles. Zipcar's 2018 member survey found that 65 percent of members do not own a personal vehicle, and 54 percent of members gave up a personal vehicle after joining Zipcar.[1]

Source: https://usa.streetsblog.org/2013/01/02/avis-acquires-zipcar-what-are-the-implications/

Carshare companies require certainty in markets before launching. Numerous carshare companies have failed in attempts to create new models, such as point-to-point carshare. Carshare companies generally operate independently based on markets, without needs of management or permits from public agencies. However, partnerships between carshare providers, private employers, developers, and transit systems have also demonstrated success by creating certainty with assets. For example, affordable housing developers in the City of Sacramento have partnered with a community electric vehicle provider to offer shared electric vehicles for their residents. This arrangement provides access to the residents who may not want or be able to purchase their own vehicles and allowed the developers to reduce the amount of parking they constructed. In Baltimore, Maryland, the city's department of transportation and transit agency (Metropolitan Transit Administration) have designated dedicated parking for Zipcars in various commuter rail stations, creating an opportunity for transit users to have multi-modal trips for their needs, such as grocery shopping, with the certainty of access to a vehicle to get them beyond the immediate span of the transit system.

[1] https://www.zipcar.com/press/newsroom/we-are-still-in#:~:text=1%20Zipcar%20takes%20up%20to,owned%20vehicles%20off%20the%20road.&text=65%25%20of%20Zipsters%20do%20not,vehicle%20after%20joining%20a%20car.&text=After%20joining%2C%20round%2Dtrip%20car,miles%20than%20they%20did%20previously.

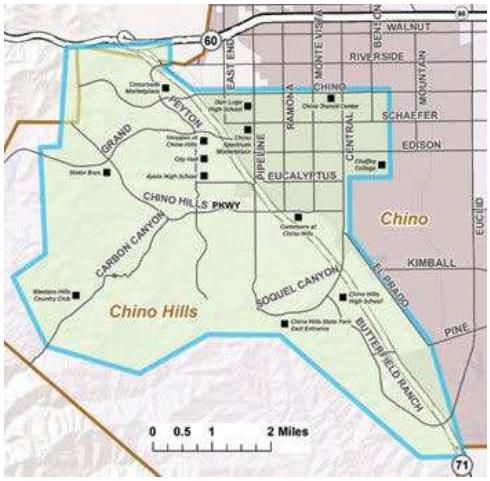
MICROTRANSIT: SHORT-TERM, LOW EFFORT

Microtransit services are increasingly serving to enhance or replace traditional transit in various use cases. Microtransit platforms are popular as their model creates dynamic, on-demand service for communities, often with less first and last-mile effort (sometimes door to door). Additionally, partnerships with microtransit companies have provided opportunities for cities to reduce or eliminate investment in underperforming transit lines, create opportunities for enhanced equity through increased access or reduced fares, and share financial risk with private partners.

While concerns around labor and unions remain, microtransit services mostly function in addition to or in collaboration with transit services, with some notable exceptions. UTA, for example, launched a microtransit service in 2020 specifically to improve first and last-mile connectivity to its light rail stations where other options did not exist. West Sacramento similarly launched microtransit through a large portion of the city to enhance overall access to services for residents alongside transit. However, some places, such as the City of Wilson, North Carolina, have chosen to eliminate traditional transit entirely and utilize microtransit as an alternative means of increasing access. Wilson is a city with a population of under 50,000. Its previous fixed route system was very small, and conversion to microtransit provides an example of a relatively small and self-contained area and not necessarily applicable to an area as large and heavily populated as the Metro-Valley portion of San Bernardino County. Other jurisdictions have quickly rolled out microtransit services in response to COVID, to serve needs such as moving essential workers safely, or delivering personal protective equipment to various populations.

Due to the sophisticated nature of microtransit platforms and the popularity of the services, pilots around the country have identified use cases for successful microtransit. As noted above, there are new pilots launching, but the most common use cases for microtransit have been identified as:

- First/last-mile access to transit
- Late night/overnight levels of service
- General service for low density areas



Omnitrans has established a zone that provides more geographical coverage than the previous fixed route. Instead of the cutaway vehicles used on Route 365, Ford Transit vans are operated. Passenger can access the service by reserving a trip using a mobile app. The service will serve origins and destinations within the zone, which includes the Chino Transit Center and connections to various Omnitrans fixed routes. One of the key features of the service is near instantaneous passenger pickups, within 15 minutes of completing a trip request. Reservations can also be made up to three days in advance.

Passengers are directed to a nearby "virtual stop" at the closest major intersection or where a small neighborhood street reached a collector or arterial street. ADA-eligible passengers are picked up and dropped off at the curb at their originating location and destination. Fare payment is also made via the mobile app.

RIDEHAILING: SHORT-TERM, MEDIUM EFFORT

TNCs such as Lyft and Uber dramatically shifted the mobility system, creating challenges and opportunities for public agencies and users. While some cities, such as New York and San Francisco, have imposed fees on TNCs to disincentivize congestion and increased emissions, others have forged partnerships with TNCs to enhance mobility systems. The City of South Bend, Indiana, for example, utilized a partnership with Lyft and large local employers to offer rides for employees who were low income or worked during non-commute hours. The program increased productivity by an average of one hour per shift and reduced late arrivals by 1.2 percent.

Source: https://www.flickr.com/photos/stockcatalog/40834812504

TNCs may serve needs in use cases such as first/last mile, non-emergency medical transport, and late night or overnight service. Partnerships with TNCs should consider overall benefits and risks and may need to examine relevant impacts outside of mobility, such as political impacts and labor concerns. Both Uber and Lyft are currently contesting California legislation requiring them to classify drivers as employees and may temporarily leave the state. Additionally, TNCs have been reluctant to share data with public agencies and governments, including ridership, driver, and origin/destination data. Third-party services that collect some of that information, such as Sherpashare, offer limited TNC data at a cost, but data sharing with TNCs continues to be difficult. Safety concerns have also been an issue in TNC usage, as TNC drivers do not undergo the same level of training, background checks, or accountability as public transportation providers. In general, flexibility and risk mitigation for the long-term sustainability of a partnership with TNCs should be considered.

MOBILITY AS A SERVICE/ MOBILITY ON DEMAND: MEDIUM TO LONG-TERM, HIGH EFFORT

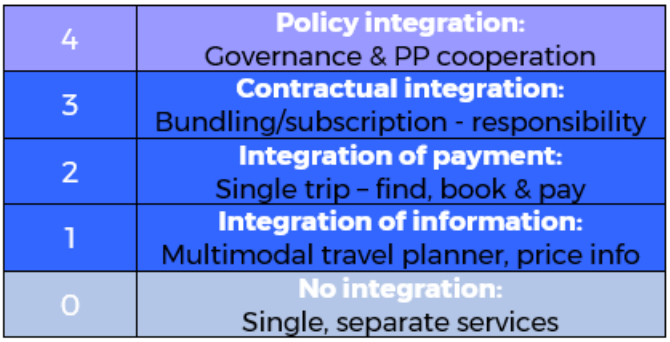
Mobility as a Service (MaaS) and Mobility on Demand (MOD) refers to a set of mobility options brought together in a central platform, accessible to the user in a seamless format. MaaS platforms may be single mode, such as combining trip planning, booking, and real-time information for multiple transit services in one app. The platforms may also span across public and private providers. In Portland, Oregon, Tri-Met's Tripplanner app, for example, allows users to plan, book, and request TNC services and traditional transit in a single app.

As shown in Figure 4, the highest level of MaaS is full integration across public and private providers and subscription bundles that allow users to pay once for access to a suite of mobility options. A full MaaS system, integrated completely across private and public providers and allowing planning, booking, payment, and requesting of service in one location has not yet been accomplished in the United States. In the San Bernardino region, Omnitrans' partnership with Transit App allows trip planning and payment integration across various public transit providers in one platform. While this does not demonstrate a MaaS system that crosses public and private providers, it does create a strong foundation for MaaS through a level 2 program for public partners. Ideally, the framework for integration can continue to grow and be applied to private partners as well.

MaaS has received much attention for its potential benefits. In addition to streamlining the user experience and making transit more accessible and appealing, full MaaS programs such as Whim in Helsinki, Finland, have demonstrated increased transit usage and reduced single-occupant vehicle usage among members. However, the integration of technology even internally is challenging for many agencies. Capacity, funding, and coordination issues, as well as varying levels of technology and lack of interoperability between existing platforms have made

the process of forming single-platform services difficult even internally. Agencies find themselves working across varying goals and needs, levels of data, specific technical differences, different fare structures, and even differences in data used. For example, the San Francisco Bay Area, which serves nine counties with 27 transit agencies, has been working for over ten years to unify their trip planning and payment systems, just for public transit. While significant progress has been made over time, and many services now have interoperable technology enabling payment across public providers, there is still not full integration in the system. When the process of integration began, transit services serving overlapping areas were using such different data that a customer needing to transfer from one bus operator to another would sometimes be looking at two different maps of the same location for transfer points. These issues have made integration challenging even in public services. Integrating across public and private services requires standardized open data and has been met with resistance from many private companies. Interoperability between systems has also presented challenges for many.

Figure 4: MaaS Levels of Integration



Source: www.itsinternational.com/sections/transmart/features/maas-market-conference-platform-for-pioneering-projects/

However, even minor changes in the user experience through integration may enhance transit and increase ridership. Real time information, captured and shared through a platform that allows users to plan a full trip with multiple modes, creates certainty in travel time and access. Allowing users to know their multimodal route from door to door and providing access to paying for trips before leaving the house, makes transit more accessible and attractive, and helps create a complete trip for the user, enhancing the reliability and usage of transit as a system.

Moving towards a MaaS system incrementally, in combination with infrastructure enhancements to promote alternatives to SOVs, can help make non SOVs a competitive option for users seeking ease, convenience, and security.

3.2.2 NEW MOBILITY EXPERIENCE

As described earlier, Omnitrans is currently embarking on San Bernardino County's first innovative, alternative service delivery program with its OmniRide microtransit service. As such, a look at two microtransit case studies may provide some context and lessons learned for potential future refinement and expansion of OmniRide.

Microtransit and related service innovative techniques are often characterized as "New Mobility." The focus of New Mobility is to forge new partnerships and get more out of fixed-route bus service than currently achieved. New Mobility is not traditional, fixed-route transit, nor is it restricted to senior citizens, persons with disabilities, and others who are eligible for services under the Americans with Disabilities Act (ADA). Instead, New Mobility is flexible, by deviating where needed from fixed alignments and/or fixed schedules and makes use of new technologies and non-standard transit approaches.

Transit agencies often operate routes in places or time of day when fixed route service cannot be operated in a cost-effective manner, such as in low-density areas, areas with poor pedestrian access, areas that are difficult to operate a standard bus in (such as narrow streets or cul-de-sac neighborhoods), evening and overnight periods, and weekends. In many of these cases, a non-fixed route, curb-to-curb, or curb-to-hub service can be more cost-effective.

New Mobility also has the potential to provide a more premium level of service. Table 3 describes the characteristics of standard fixed-route bus service and New Mobility services.

Table 3: Characteristics of Standard Fixed Route and New Mobility Services

FIXED ROUTE BUS	NEW MOBILITY
	
– Bus arrives at scheduled times, but often impacted by congestion delays. – Pickups and drop-offs are at designated bus stops on arterial streets. – Generally limited to higher density areas and higher use times. – Travel time is generally 2X direct drive time.	– The vehicle comes on demand or at pre-determined times. – Pickups and drop-offs are curbside at the customer's origin and destination points. – Theoretically, service may operate throughout the area, all the time. – Travel time is similar to direct drive time.

Despite its apparent positive and preferred qualities, convenience trade-offs occur with New Mobility, such as:

- Operational arrangements (agency employees and/or vehicles, private bus and microtransit company operators and/or vehicles, TNCs/gig workers)
- Cost (per trip or total program)
- Fare (same as fixed route or more open- or close-ended for the customer and the agency)
- Reservations (on-demand, same-day, next-day)
- Eligibility (open to everyone or restricted to certain populations)
- Door-to-door or shared ride
- Curb-to-curb or curb to bus stop/rail station/transit hub
- Coverage (entire service area or defined zones)
- Service span (24/7, during existing service hours, nights and weekends, overnights, etc.)

Figure 5 and Table 4 outline the trade-offs between control, risk, and costs when a transit agency operates New Mobility service either through contracts and arrangements with private operators or in-house by the agency itself.

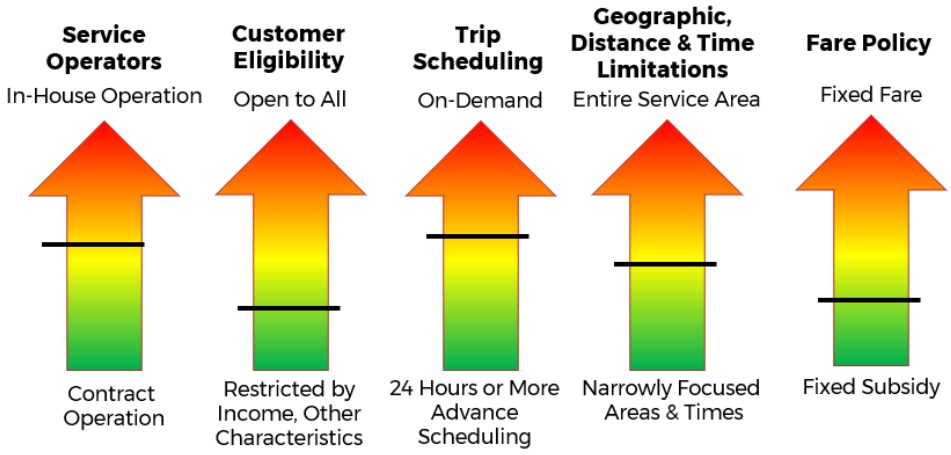
Figure 5: New Mobility Service Operation, Control, Risk, and Cost Trade-offs

Table 4: Strengths and Weaknesses of Different New Mobility Service Operating Alternatives

	OPERATED BY TAXI / TNC / MICROTRANSIT PROVIDERS UNDER CONTRACT TO TRANSIT AGENCY	OPERATED BY TRANSIT AGENCY
Advantages	Less costly: lower operating costs, little or no up-front cost for the agency (assuming existing vehicles can be re-purposed) Closed-ended: service could be discontinued or changes at the end of the contract period. Less agency facility and maintenance demand.	Agency controls service quality and customer service. Agency controls the availability of service, number of vehicles and operators. No provider instability issues; agency owns vehicles and employs drivers.
Disadvantages	Agency has less control over the quality of service and customer service. The supply of TNC vehicles is often limited in lower-density areas and at less productive times of day, particularly for mobility accessible vehicles. Risk of company and price instability.	More costly: capital investments for vehicles and facilities, potentially higher operating costs (labor rates) Significant administrative and staffing burden. Increases fleet and maintenance requirements.

The challenge for a transit agency, therefore, is to find the "sweet spot" or attributes and characteristics that work best for it, by manipulating the service and operating parameters to balance customer utility and agency costs, as illustrated in Figure 6.

Figure 6: Transit Agency's Service and Operating Parameters



Omnitrans has been adjusting its service offering to strike the right balance the level of service provided (stemming from available budget) and ridership needs and response. The provision of OmniGo services, using smaller, cutaway-type vehicles instead of full-size, 40-ft. buses, is one example of "right-sizing" service offerings in areas of lower population density and ridership but with transit needs and demands. The implementation of its first microtransit service, the Chino Hills OmniRide, constitutes the agency's next step in achieving this balance. Similarly, Omnitrans had also adjusted its service delivery model to include contracting services to private operators in limited demand areas.

Two New Mobility microtransit pilot programs that were the outcomes of similar trade-off considerations, and with potential applicability to San Bernardino County, can be found in St. Petersburg, Florida and Oakville, Ontario:

ST. PETERSBURG DIRECT CONNECT

The Pinellas Suncoast Transit Authority (PSTA) in St. Petersburg, Florida was one of the first transit agencies in the U.S. to both attempt conversion of low productivity fixed-route service to microtransit and to partner with private companies, including Uber, to provide microtransit service. PSTA desired to find ways to reduce operating costs in low- demand/low-productivity areas while serving existing ridership and potentially to increase its ridership base.[2]

Figure 7: Direct Connect Service Map

Source: Uber

Direct Connect was started as a pilot program and now covers eight separate zones within the service area (Figure 7). The first zones replaced fixed-route services that had originally been designed to feed a mainline bus route but lost ridership over time. In the original pilot, riders were allocated a $3 subsidy for rides from point-to-point within the Direct Connect zone or to/from any point in the zone to a single key transfer point to an adjacent, mainline, fixed route. PSTA contracted with Uber, a local taxi company, and its paratransit provider, to provide the service.

The pilot program achieved PSTA's goal of reducing costs, but ridership was minimal. However, the agency decided to modify the program to improve ridership. The rider subsidy per trip was increased to $5.00, improved the app to allow more seamless scheduling and booking of travel among the fixed route and microtransit service, and greatly expanded the number of transfer points between microtransit and fixed route transit, as shown on the map (Figure 8).

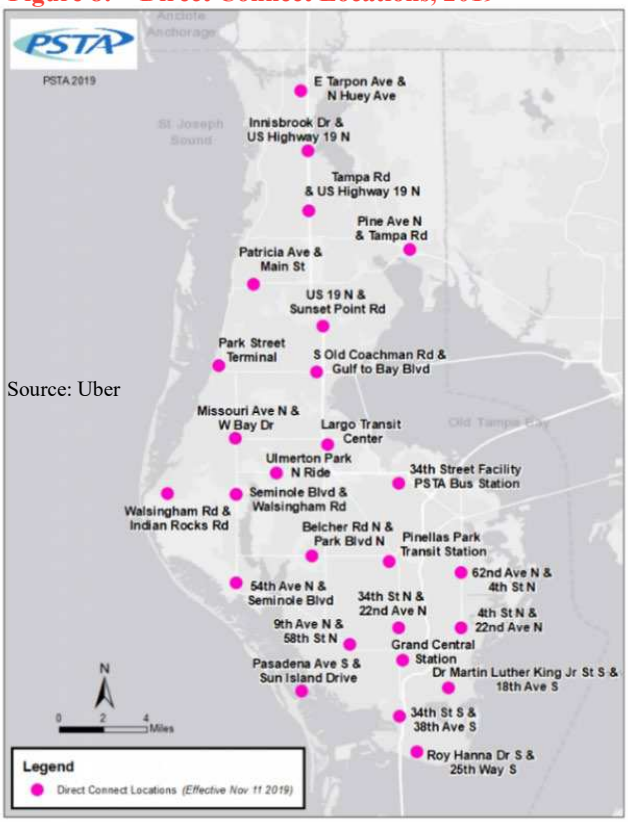
[2] Shared Use Mobility Center, When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot, 2019.

While Direct Connect service is geography-based, the potential exists to apply it in areas served by fixed routes during time periods when operating costs far exceed system norms and averages, while being mindful of potential social equity/Title VI implications.

A study conducted by WSP examined the operating subsidy of its fixed route system for the evening period, when ridership is typically considerably lower than during the daytime, compared with the average cost per Direct Connect microtransit trip, which had an estimated operating subsidy of $7.00 per trip (Figure 9).

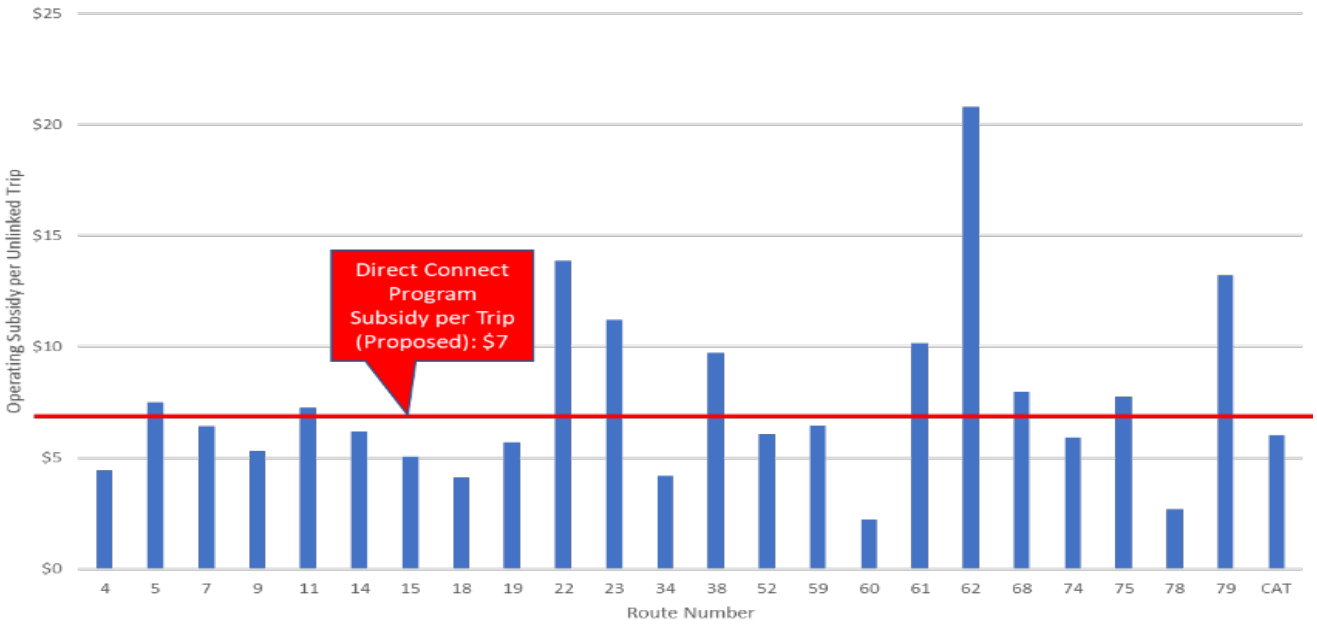
While several fixed routes exhibited comparable or lower per-trip costs, six routes exhibited costs significantly higher than the Direct Connect program and were identified as candidates for conversion from fixed route to microtransit after 7 pm. As a result of this analysis, PSTA has embarked on a late-night pilot project with an emphasis on second and third shift work trips that were underserved or not served at all.

Figure 8: Direct Connect Locations, 2019



Source: Uber

Figure 9: PSTA Fixed Route System Operating Subsidy per Unlinked Trip After 7:00 PM



OAKVILLE HOME-TO-HUB SERVICE

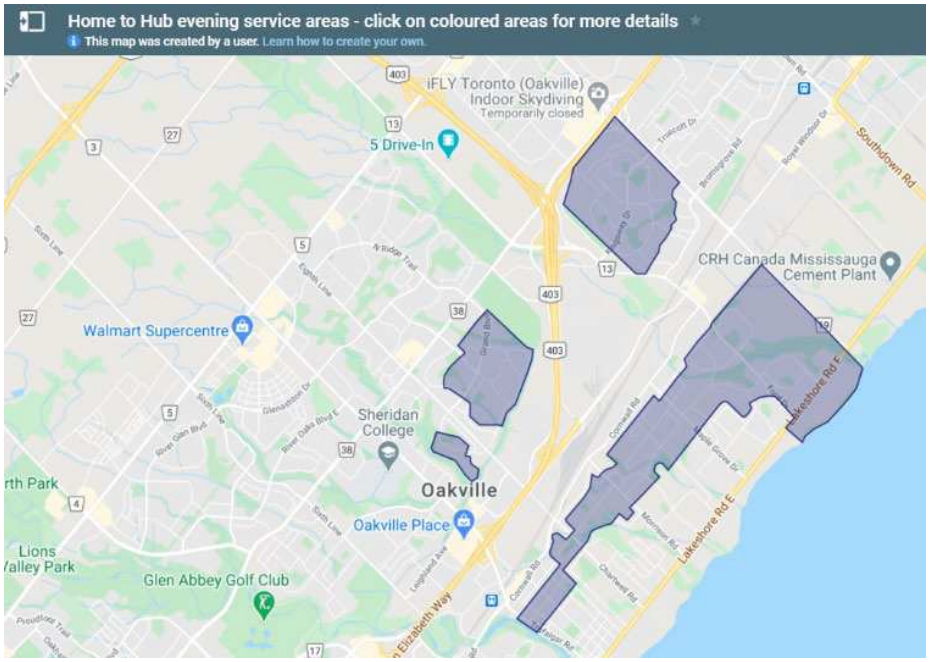
Oakville, Ontario is in the Toronto metropolitan area. With a population of nearly 200,000, it is an established community with strong bedroom community characteristics characterized by travel to nearby cities and employment centers. In the same year as the introduction of PSTA's Direct Connect service, Oakville Transit introduced its "Home to Hub" service, as a lower cost, more efficient way of serving moderate- to low-density residential areas to the transit system's Uptown Core terminal, a major hub. Oakville Transit engaged its paratransit provider to operate the service, which generally focuses on weekday peak periods.[3]

Paratransit vehicles are used. Trips are booked 2-10 days in advance. Unlike PSTA's program, which allows for intra-zone trips, Home-to-Hub will pick up and drop off riders in front of their homes, but trips must either originate or terminate at the transit hub.

Oakville Transit's goals included reducing costs by replacing fixed-route service with microtransit and broaden the reach of transit and to provide more convenient connections to the rest of the Oakville system and commuter rail service to Toronto.

The system was expanded by adding a new Home-to-Hub zone that connects with the system's downtown hub and commuter rail station. Unlike the first service, this area is served throughout the day, until 11 pm, and on weekends. Oakville Transit also added late night service zones (Figure 10), providing connections to the rest of the system and commuter rail service to Toronto, as shown to the right. The late night service zones are generally located outside acceptable walking distance of fixed-route service, which also operates during these same periods.

Figure 10: Home to Hub Evening Service Areas



As a result of the Home-to-Hub service, Oakville Transit was able to delete six low performing bus routes and reallocate the funding not only to Home-to-Hub but, because of lower operating costs, to boost service frequency on its most popular fixed routes.

[3] Oakville Transit Services Review, American Public Transit Association Bus and Paratransit Conference, 2017

4 SERVICE ANALYSIS

4.1 BACKGROUND

The Metro-Valley service analysis focuses on Omnitrans. The analysis intends to identify correlations between system performance on a route-by-route-basis, and service design and characteristics that would point to potential service improvements, including a high-frequency network and innovative concepts and programs in areas with lower demand and challenging operation for conventional transit.

A hybrid of base data provided by Omnitrans is used to indicate routes and areas that perform well – and may be candidates for higher frequency service. Conversely, routes and areas that do not perform well may be candidates for alternative services, or possibly, no service at all.

The first step of the analysis uses performance data - including ridership, on-time operation, and operating costs – that reflect the system in operation prior to the service reduction enacted in response to the pandemic in early spring 2020. The second step reconciles pre-pandemic performance data with the Omnitrans system changes scheduled to be implemented in September 2020, which involved service reductions and route restructuring. Omnitrans had been planning a significant service change on this date, reducing the overall level of service in response to a downward trend in ridership in recent years.

While this hybrid of pre- and post-pandemic service characteristics and performance cannot provide a precise "apples to apples" comparison, it provides enough information to help identify issues and target areas for Task 3 recommendations.

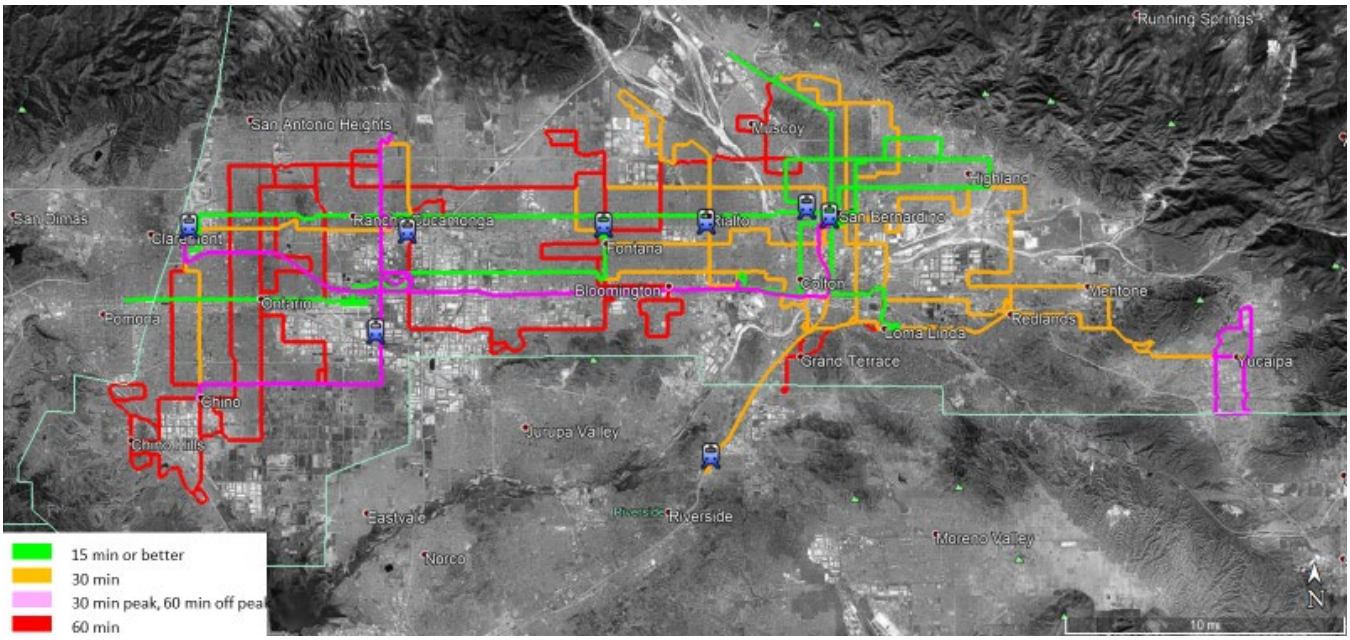
4.2 PRE-PANDEMIC SYSTEM CHARACTERISTICS AND PERFORMANCE

Frequency, directness, and productivity are the focus of the first step analysis. Correlations were developed to determine potential patterns that define high performing or low performing service. These correlations helped indicate areas of potential improvements, such as by providing a more frequent service and/or implementing an alternative and innovative service.

FREQUENCY

Figure 11 illustrates the application of different service frequencies across the Omnitrans system. Table 5, on the following page, shows the system's highest and lowest frequency routes.

Figure 11: Pre-Pandemic System - Weekday Service Frequency



The high-frequency network, consisting of six routes that operate every 15 minutes or better throughout the day (shown in green), is focused on two east-west corridors between the East Valley and West Valley portions of the service area and in and around the City of San Bernardino in the East Valley. Routes 14 and 66, taken together, form a high-frequency spine along Foothill Boulevard that connects San Bernardino and Montclair through Fontana, Rancho Cucamonga and Rialto. Paralleling this corridor to the south, Route 61 serves as a similar spine along San Bernardino Avenue, but only between Rancho Cucamonga, Montclair and Pomona. San Bernardino Avenue west of Ontario consists of segments that are either unserved or partially served by a disconnected series of low or moderate frequency West Valley north-south routes. East of Fontana, San Bernardino Avenue, is served by the moderate frequency Route 19. However, west of Arrowhead Medical Center, Route 19 loses its direct, spine characteristics to provide circuitous local coverage as far east as Yucaipa.

The very-low-frequency network, consisting of 12 routes that operate every 60 minutes throughout the day, is generally concentrated in the West Valley, including a series of north-south local routes in the West Valley. A few other low-frequency routes are in the East Valley. *It should be noted that eight of the 12 low-frequency routes are eliminated or significantly restructured as part of the September 2020 service change.*

Table 5: Pre-Pandemic System - Highest and Lowest Frequency Routes

FREQUENCY	ROUTE	AREA SERVED	DESCRIPTION
High (15 minutes or better)	sbX CSUSB-VA Hospital	East Valley	N-S BRT line with dedicated lanes and priority treatments thru San Bernardino
	1 ARMC-San Bernardino-Del Rosa	East Valley	Local SW-NE route serving San Bernardino in Colton
	3/4 Baseline-Highland-San Bernardino	East Valley	Bi-directional loop connecting central San Bernardino with neighborhoods and communities to the north
	14 Fontana-Foothill-San Bernardino	East Valley	Relatively short E-W route connecting San Bernardino and Rialto via Foothill Blvd.; connects with Rt 66
	61 Fontana-Ontario Mills-Ontario International Airport	West Valley	Long E-W route connecting Fontana and Pomona thru Ontario
	66 Fontana-Foothill Blvd-Montclair	West Valley	E-W route connecting Fontana and Montclair via Foothill Blvd; connects with Rt. 14
Low (60 minutes or wider)	2 Kendall & Palm-Cal State-E Street-Loma Linda	East Valley	Local, all-stops underlay service along sbX alignment
	12 Fontana-Muscoy-Cal State	East Valley	SW-NE local route connecting Fontana and northern neighborhoods and communities in East Valley
	20 Fontana-Metrolink via Hemlock-Kaiser ***Eliminated 9/2020***	West Valley	Short neighborhood feeder in Fontana
	29 Bloomington-Valley Blvd-Kaiser ***Redesigned 9/2020***	West Valley	Short neighborhood feeder/loop serving SE portions of Fontana
	67 Chaffey College-Baseline-Fontana	West Valley	E-W service on a segment of Baseline Rd
	80 Ontario International Airport-Vineyard Ave ***Eliminated 9/2020, portion included in new Rt 87***	West Valley	N-S route connecting Ontario and Upland via Vineyard Ave
	83 Chino-Euclid Ave-Upland ***Redesigned 9/2020***	West Valley	N-S route connecting Chino and Upland via Euclid Ave
	84 Chino Hills-Mountain Ave-Upland ***Redesigned 9/2020***	West Valley	N-S route connecting Chino and Upland via Mountain Ave
	86 S Ontario-Campus-San Antonio Hospital ***Eliminated 9/2020, portion included in new Rt 87***	West Valley	N-S neighborhood mand employment are coverage in Ontario
	88 Chino Hills-Ramona Ave-Montclair	West Valley	N-S route between Chino and Montclair via Ramona Ave, connection to Chino Hills
	325 OmniGo Grand Terrace ***Eliminated 9/2020, portion included in new Rt 305***	East Valley	Short route connecting Loma Linda and sbX to Grand Terrace at southern end of service area
	365 OmniGo Chino Hills ***Replaced with OmniRide microtransit service 9/2020***	West Valley	Local circulator in SW corner of service area.

DIRECTNESS

The directness of a route's alignment can have a bearing on passenger's travel time, and therefore influences convenience and ridership attraction. For this analysis, directness is measured by comparing the distance traveled between the ends of the line with the route a motorist would take (using directions provided by Google Maps). It should be noted at not all routes are designed to be ridden from end-of-line to end-of-line. According to Omnitrans, for example, Route 82 was previously a through-routed service that reduced its vehicle requirement by one by eliminating turnarounds. The result was operationally efficient but was not tailored to accommodate end-

of-line to end-of-line travel. However, as a general measure, the directness factor still identifies routes for further analysis in conjunction with other variables such as those described in this section of the report. Route directness is illustrated in Figure 12. Figure 13 provides a comparison by route.

Figure 12: Pre-Pandemic System - Route Directness

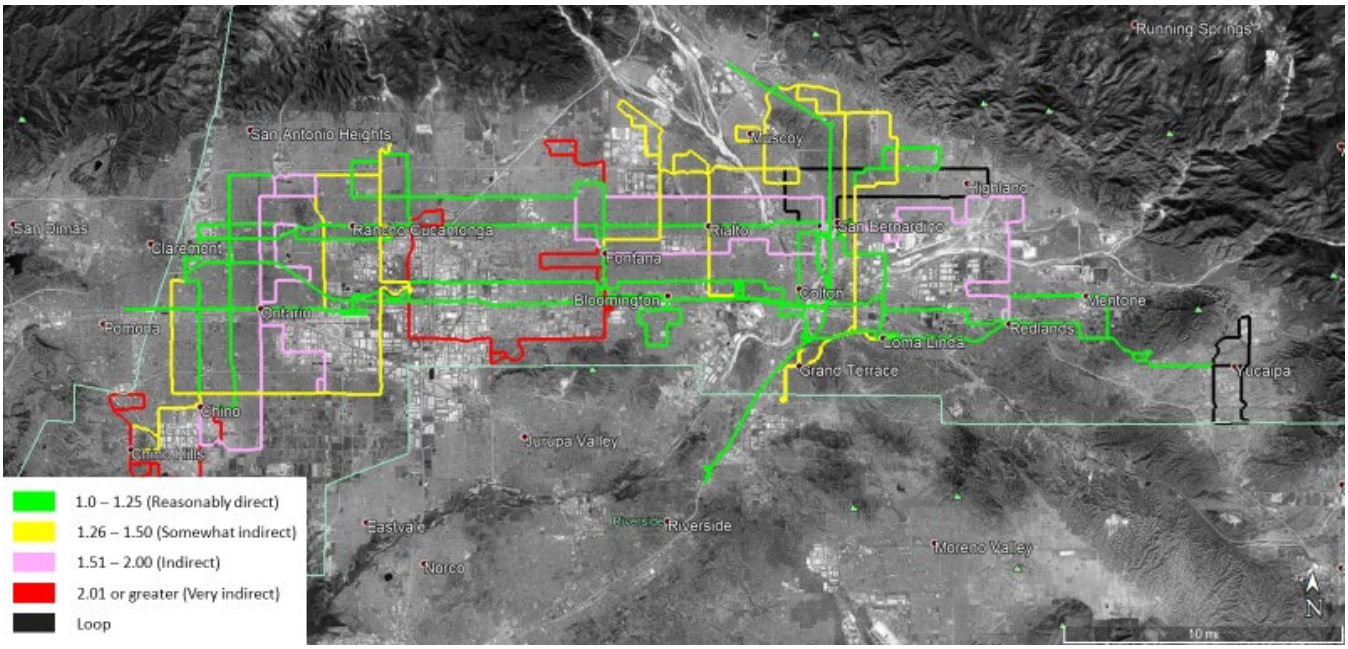
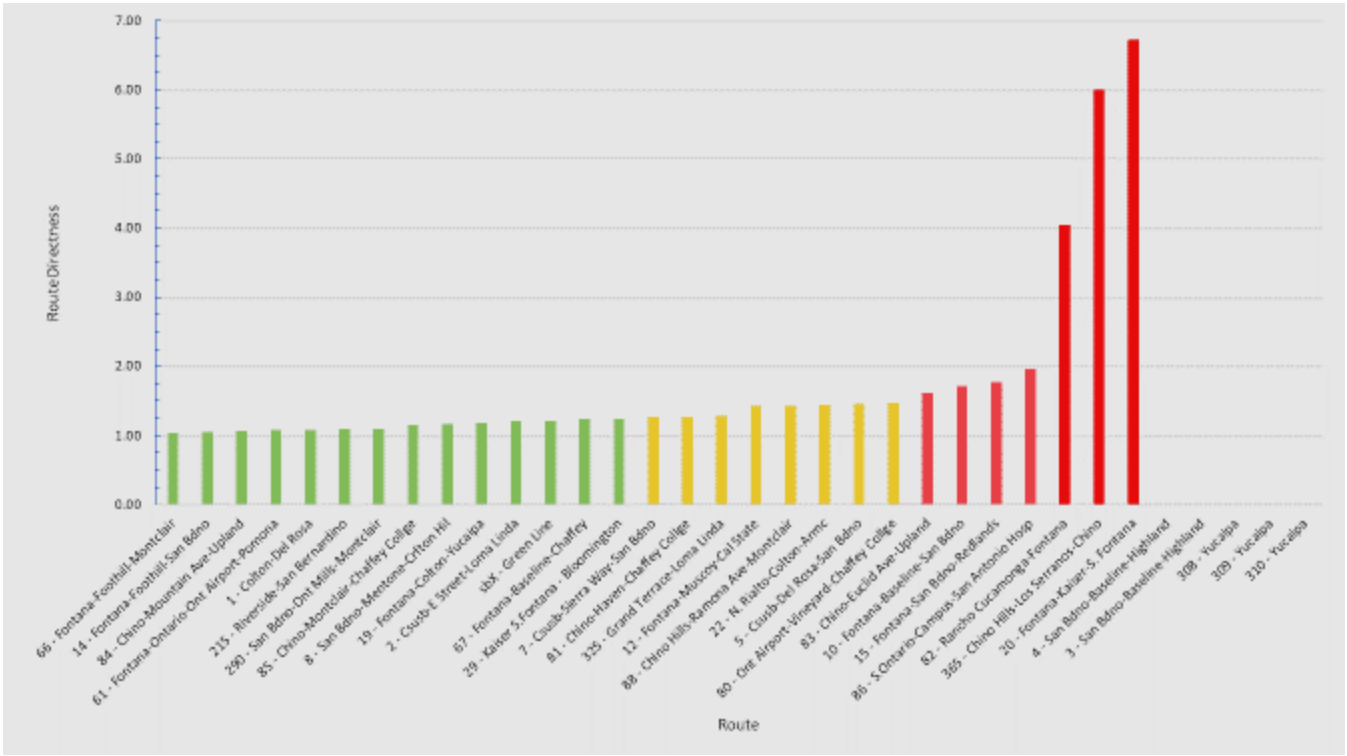


Figure 13: Pre-Pandemic System - Route Directness Comparison



Based on this methodology, routes with a score of 1.0 to 1.25 are considered "reasonably direct," while routes with scores of 1.51 and higher are considered indirect. In other words, the travel distance taken by the bus is at least 1-½ times greater than the same end-to-end trip that would be taken by a motorist.

Overall, most routes are considered direct or only somewhat indirect. Loop routes, such as the OmniGo circulators in Yucaipa, are difficult to classify as direct or indirect because of their alignment. However, three routes, all in the West Valley, stand out for their high level of indirectness:

- 20 Fontana-Kaiser-South Fontana *(eliminated effective September 2020)*
- 365 OmniGo Chino Hills *(replaced with OmniRide microtransit effective September 2020)*
- 82 Rancho Cucamonga-Fontana

Four other routes – three West Valley routes and one East Valley route - fall into the indirect category but not as severely as the three listed above:

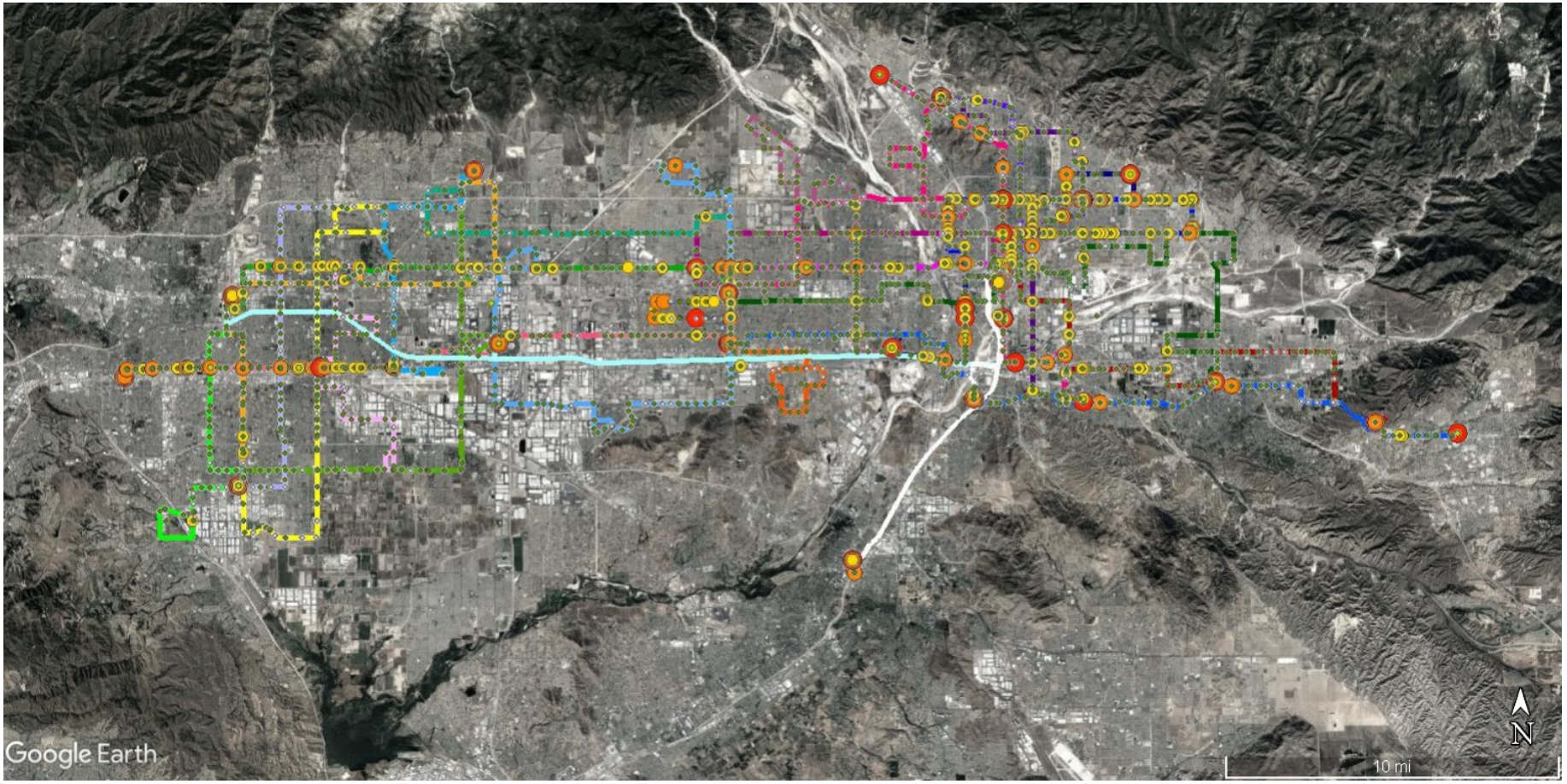
- 86 South Ontario-Campus-San Antonio Hospital *(eliminated effective September 2020)*
- 15 Fontana-San Bernardino-Redlands
- 10 Fontana-Baseline-San Bernardino (It should be noted that a rider traveling from end-of-line to end-of-line would use Route 14 rather than Route 10; both routes have the same terminus locations but serve different areas.)
- 83 Chino-Euclid Avenue-Upland *(restructured effective September 2020)*

As part of its ongoing planning activities, Omnitrans recognized the indirectness of these routes and, partly as a result, eliminated two of the three lowest ranking routes in terms of directness as part of the ConnectForward plan.

RIDERSHIP

Automated Passenger Counter (APC) data were provided with weekday activity shown in Figure 14, with the largest dots signifying the highest ridership activity. This high-level compilation visualization indicates that ridership activity is generally highest in and around San Bernardino, the central portion of Fontana, and between Ontario and Pomona.

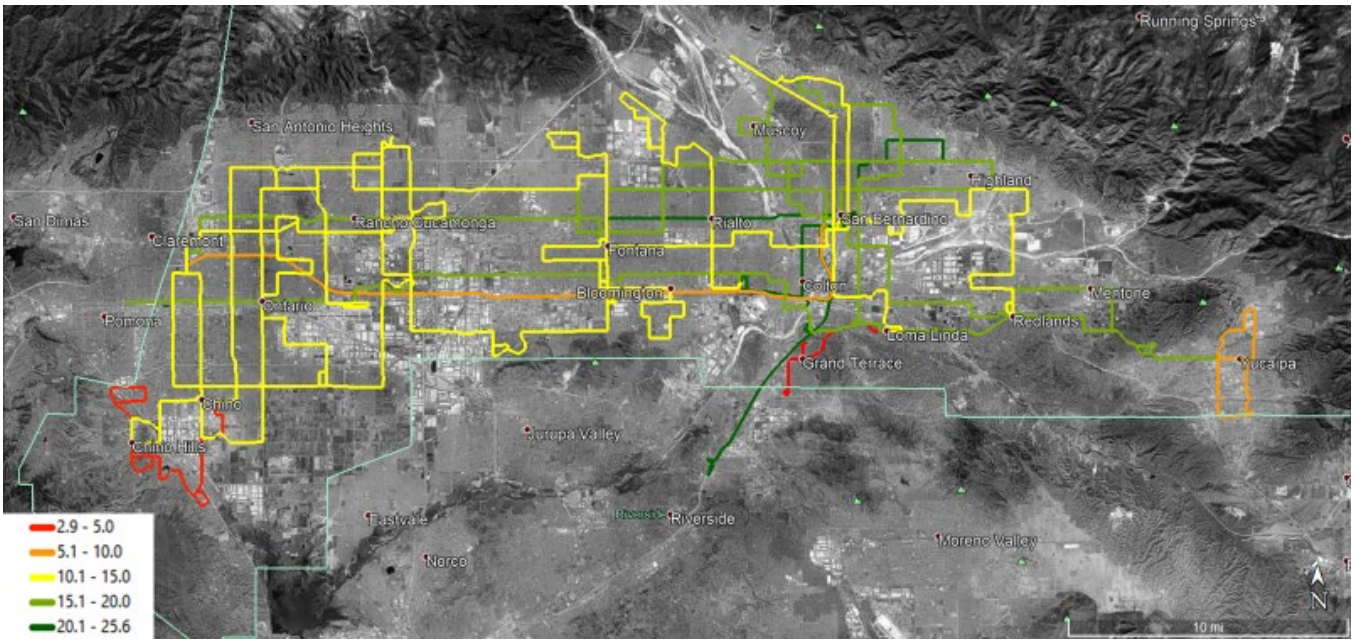
Figure 14: Pre-Pandemic System Weekday Ridership Activity



RIDERSHIP PRODUCTIVITY

Figure 15 illustrates the productivity of the system, measured in terms of passengers per hour.

Figure 15: Pre-Pandemic System - Weekday Passenger per Hour Productivity



The most productive routes serve portions of the East Valley only. These routes are:

- 1 ARMC-San Bernardino-Del Rosa
- 3/4 Baseline-Highland-San Bernardino
- 14 Fontana-Foothill-San Bernardino
- 215 San Bernardino-Riverside

The least productive route in the system is 325 Grand Terrace *(eliminated in September 2020)*.

Other under-performing routes are:

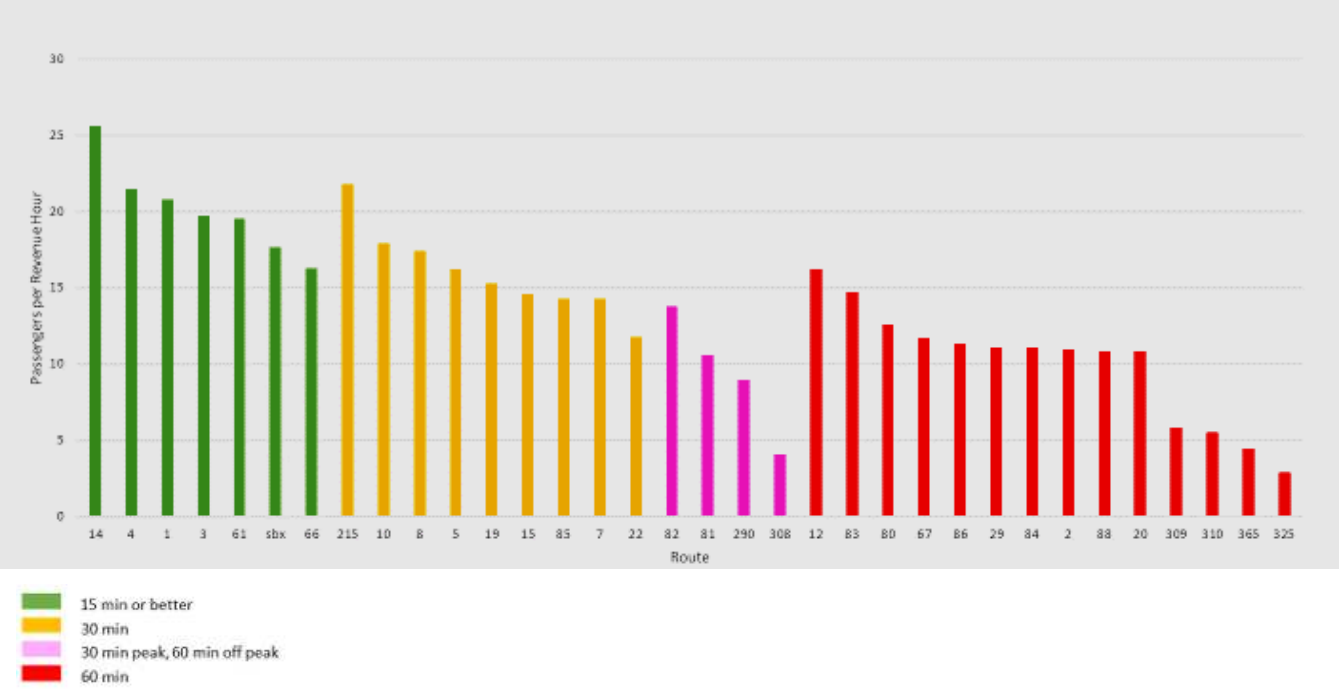
- 290 San Bernardino-ARMC-Ontario Mills-Montclair, which serves both the East Valley and West Valley, via I-10.
- 309 OmniGo Yucaipa *(eliminated and included in new OmniGo Route 319 effective September 2020)*
- 310 OmniGo Yucaipa *(eliminated and included in new OmniGo Route 319 effective September 2020)*

The remaining routes, which constitute the majority of service, are considered moderately productive.

PRODUCTIVITY, FREQUENCY AND DIRECTNESS CORRELATIONS

Correlations can be made between productivity levels and whether or not a route is frequent and/or direct- and if the level of service provided is either appropriate given the correlation or has the potential to be adjusted one way or another. Figure 16 shows the correlations between productivity and directness of service.

Figure 16: Pre-Pandemic System - Weekday Frequency and Productivity Comparison



Using 20 passengers per hour as a threshold of high productivity, three high-frequency routes are among the best performers in the system. These routes are:

- 14 Fontana-Foothill-San Bernardino
- 4 Baseline-Highland-San Bernardino
- 1 ARMC-San Bernardino-Del Rosa

All seven routes in the high-frequency category (shown in green) carry 15 or more passengers per hour; there are no low performing high-frequency routes, suggesting that no frequency adjustments are warranted among this group.

Among the group of moderate frequency routes (shown in gold), operating about every 30 minutes throughout the day, Route 215 stands out as being highly productive – the second most productive route in the system – suggesting the potential for more frequent service. Seven other routes are close to the 15 passengers per hour average, suggesting that their frequency is appropriate. However, one route in this group, 22 North Rialto-Riverside-ARMC, is significantly less productive, suggesting the need for alignment and/or service level adjustment.

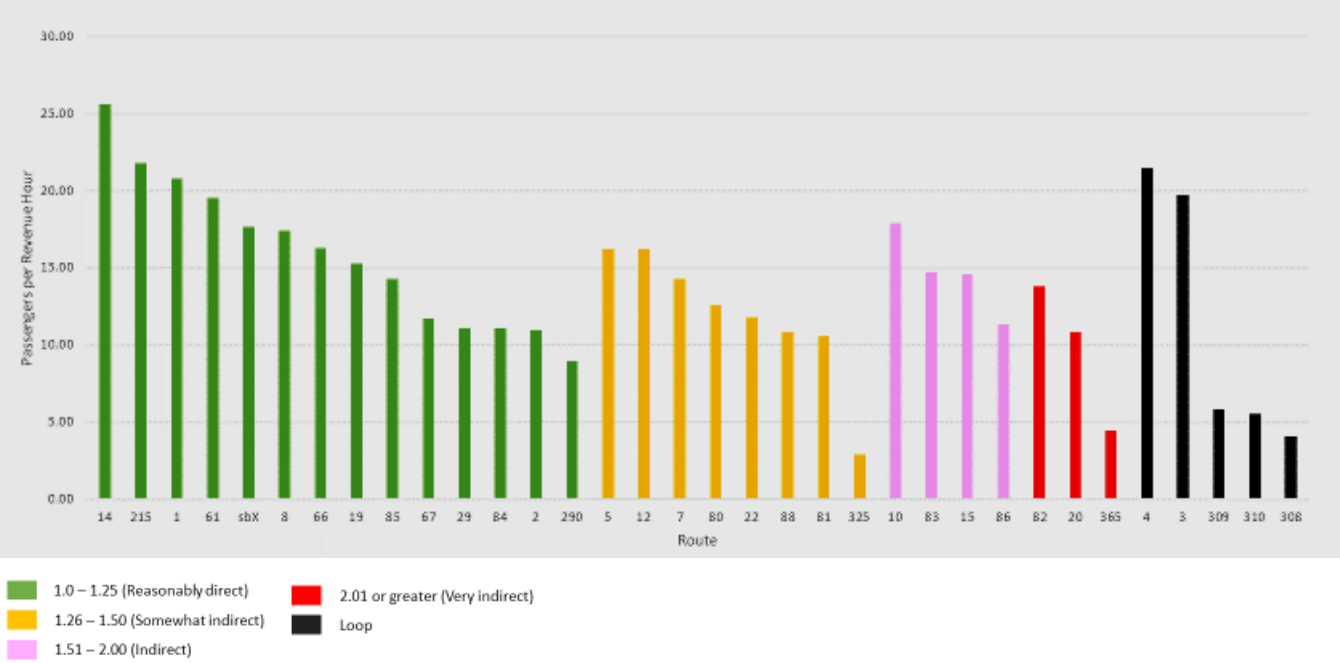
Among the routes operating 30 minutes during the peak but 60 minutes in the off-peak (shown in pink), none achieves the 20 passengers per hour threshold, but Route 82 Rancho Cucamonga-Fontana-Sierra Lakes. Route 82 serves a large portion of the West Valley between Fontana and Ontario and comes close to carrying 15 passengers per hour, suggesting potential for off-peak service to be improved to 20 minutes. At the other end of the spectrum is Route 308, which is the least productive of the 30-60 minutes group. *(Route 308 is eliminated and replaced by new Route 319 in the September 2020 service change.)*

The largest group of routes falls into the least frequent category (60 minutes). One of these routes, 12 Fontana-Muscoy-Cal State, exhibits good productivity, carrying more than 15 passengers per hour, suggesting the potential for more frequent service, such as 30 minutes during the peak. *(Route 12 is renamed Route 312 as part of the September 2020 service change.)*

There is a clear correlation of infrequent service and the system's worst performers as can be seen from Routes 309, 310, 325, and 365. *(All four routes are eliminated and absorbed into other routes as part of the September 2020 service change.)*

A second correlation analysis merges productivity and directness, as shown in Figure 17.

Figure 17: Pre-Pandemic System - Weekday Directness and Productivity Comparison



While there is a general correlation between good productivity and high frequency, there are several examples of routes with direct service but poor productivity. There are also examples of routes with only moderate frequency (30 minutes all day or 30 minutes peak/60 minutes off-peak) but with fairly good productivity. Route 10, a 30-60 minutes route, is one of the most direct routes in the system.

RIDERSHIP TRENDS

This analysis discusses the overall ridership trend in the last decade, which has been steady and significant during that period, as shown in Table 6 on the following page. While the amount of service supplied grew by 9 percent, ridership declined by 31 percent. The decline in productivity was even greater, at 37 percent.

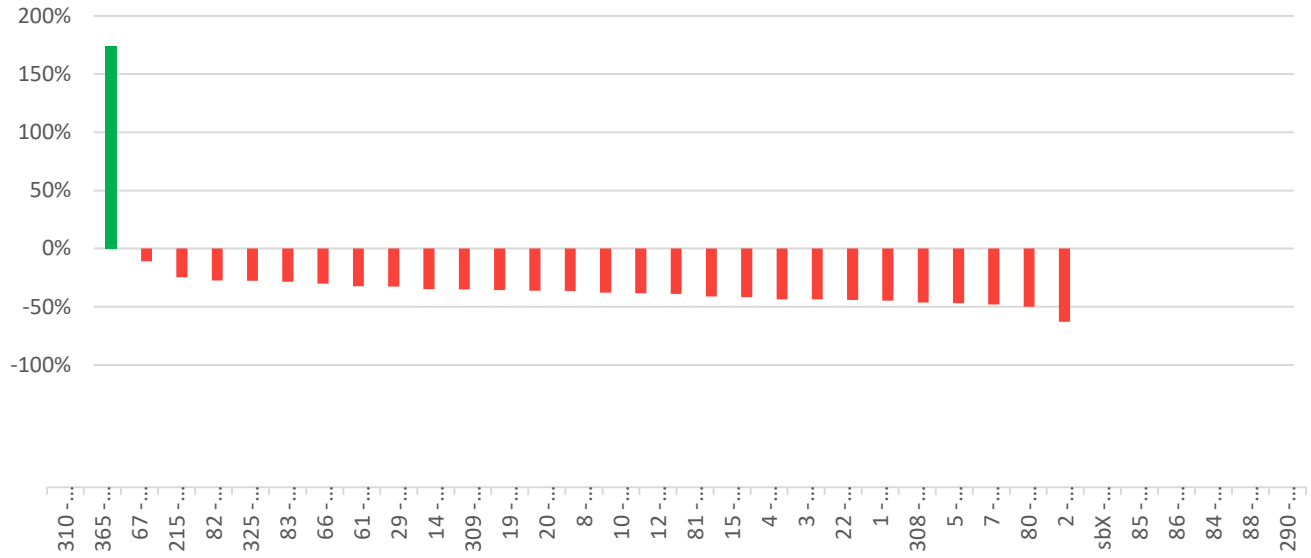
Table 6: Omnitrans Systemwide Ridership Trend (2013-2018)

YEAR	UNLINKED PASSENGER TRIPS	REVENUE HOURS	UNLINKED PASSENGER TRIPS / REVENUE HOUR
2013	15,655,099	615,860	25.4
2014	15,119,122	644,518	23.5
2015	13,922,152	646,010	21.6
2016	12,379,517	635,371	19.5
2017	11,220,253	665,344	16.9
2018	10,832,159	672,727	16.1

Source: National Transit Database

The ridership decline has not been confined to a group of routes or portions of the service area, as shown in Figure 18.

Figure 18: Weekday Ridership Change by Route (2013-2019)



Only one route, a short and low-frequency OmniGo route in Yucaipa, exhibited an increase in ridership; all other routes lost riders. Table 7, on the following page, further illustrates the impact of lost ridership on productivity. Even Omnitrans' signature route, the sbX BRT line, has lost ridership and productivity.

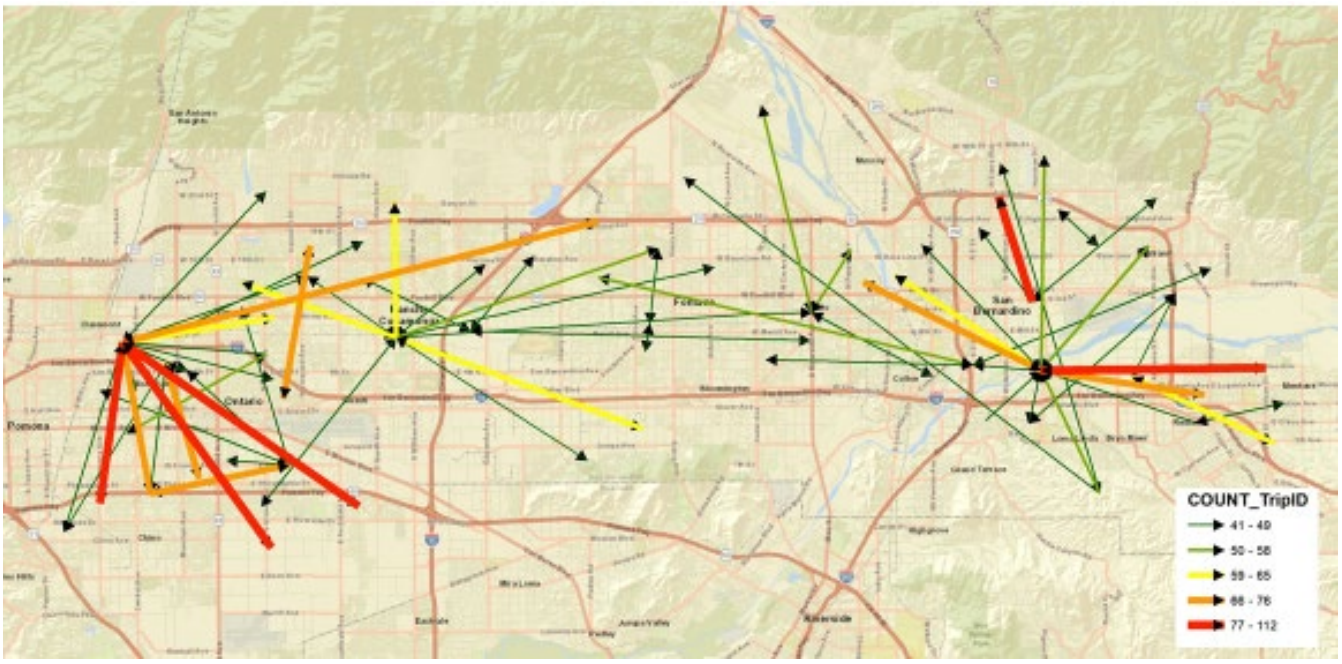
Table 7: Weekday Ridership Productivity Change by Route (2013-2019)

ROUTE	WEEKDAY - 2019	WEEKDAY - 2013	CHANGE
14 - Fontana-Foothill-San Bernardino	25.6	39.5	-35%
215 - Riverside-San Bernardino	21.8	30	-27%
4 - San Bernardino-Baseline-Highland	21.5	38	-43%
1 - Colton-Del Rosa	20.8	37.5	-45%
3 - San Bernardino-Baseline-Highland	19.7	35	-44%
61 - Fontana-Ontario-Ontario Airport-Pomona	19.5	29	-33%
10 - Fontana-Baseline-San Bernardino	17.9	29	-38%
sbX - Green Line	17.7		
8 - San Bernardino-Mentone-Crafton Hill College	17.4	28	-38%
66 - Fontana-Foothill-Montclair	16.3	24	-32%
5 - CSUSB-Del Rosa-San Bernardino	16.2	30.5	-47%
12 - Fontana-Muscoy-Cal State	16.2	26.5	-39%
19 - Fontana-Colton-Yucaipa	15.3	24	-36%
83 - Chino-Euclid Ave-Upland	14.7	21	-30%
15 - Fontana-San Bernardino-Redlands	14.6	25	-42%
85 - Chino-Montclair-Chaffey College	14.3		
7 - CSUSB-Sierra Way-San Bernardino	14.3	27.5	-48%
82 - Rancho Cucamonga-Fontana	13.8	19	-28%
80 - Ontario Airport-Vineyard-Chaffey College	12.5	25	-50%
22 - N. Rialto-Colton-ARMC	11.7	21	-44%
67 - Fontana-Baseline-Chaffey	11.7	15.5	-25%
86 - S. Ontario-Campus-San Antonio Hospital	11.3		
29 - Kaiser S. Fontana - Bloomington	11.1	17	-35%
84 - Chino-Mountain Ave-Upland	11.0		
2 - CSUSB-E Street-Loma Linda	10.9	29.5	-63%
88 - Chino Hills-Ramona Ave-Montclair	10.8		
20 - Fontana-Kaiser-S. Fontana	10.8	17	-37%
81 - Chino-Haven-Chaffey College	10.6	18	-41%
290 - San Bernardino-Ontario Mills-Montclair	8.9		
309 – Yucaipa	5.8	9	-36%
310 – Yucaipa	5.5	2	174%
365 - Chino Hills-Los Serranos-Chino	4.5	5	-11%
308 – Yucaipa	4.0	7.5	-46%
325 - Grand Terrace-Loma Linda	2.9	4	-29%

4.3 PARATRANSIT

Although not directly a part of the Task 3 analysis, it is worthwhile to look at travel patterns of paratransit trips. As illustrated in Figure 19, these can provide an indicator of general origin-destination patterns.

Figure 19: Pre-Pandemic Paratransit Origin-Destination Patterns by Census Tract



The strongest travel patterns are focused in the West Valley, primarily between Montclair and Ontario, the northern portion of Fontana, and Chino. In the East Valley, the strongest patterns emanate from the City of San Bernardino. The top 10 paratransit destinations are listed in Table 8. Most are facilities that specialize in the care of senior citizens and person with disabilities.

Table 8: Pre-Pandemic Major Paratransit Destinations

ADDRESS	LOCATION	FACILITY FUNCTION	# OF TRIPS TO/FROM
9210 Rochester Court, Rancho Cucamonga	Vocational Improvement Program	Non-profit organization dedicated to serving people with disabilities	2,267
1310 E. Riverview Avenue, San Bernardino	Vocational Improvement Program	Non-profit organization dedicated to serving people with disabilities	1,872
9029 Vernon Avenue, Montclair	OPARC	Adult day care center	1,678
1235 E. Francis Street, Ontario	OPARC, Ontario Printing, Superior Forklift Training, New Creation Christian Church, BRS Staffing	Physical therapy clinic, Commercial printer, Training school, Church, Employment agency	1,042
11406 Loma Linda Drive, Loma Linda	Loma Linda University Medical Center	Medical center	913
8333 Rochester Avenue, Rancho Cucamonga	Stadium Plaza North	Shopping mall	778
796 E, 6th Street, San Bernardino	School of Hope	Special education school	765
250 S. Date Avenue Rialto	Unlimited Quest	Youth organization	742
1005 N. Begonia Avenue Ontario	Unlimited Quest	Adult day care center	727
165 Hospitality Lane, San Bernardino,	First Step Independent Living, Cole Vocational Services, A & D Financial Services, Bleu Pitt Café, E&CO Made It Film And Media, NotaryClasses.com	Adult day care center, Social services organization, Financial planner, Bagel shop, School, Educational institution	695

4.4 REVISED SYSTEM – SEPTEMBER 2020

As previously described, Omnitrans implemented a major service reduction early 2020 in response to the pandemic. In September 2020, it began implementation of its ConnectForward recommendations, designed to respond to ridership trends and budget condition by enacting several service revisions developed under the Connect Forward initiative in response to ridership trends, productivity trends, and funding projections. The revisions include a mix of route deletions and consolidations, frequency adjustments, and replacement of some fixed-route bus service with OmniGo service, as well as a new pilot microtransit service, called OmniRide, that replaces an OmniGo route in Chino Hills.

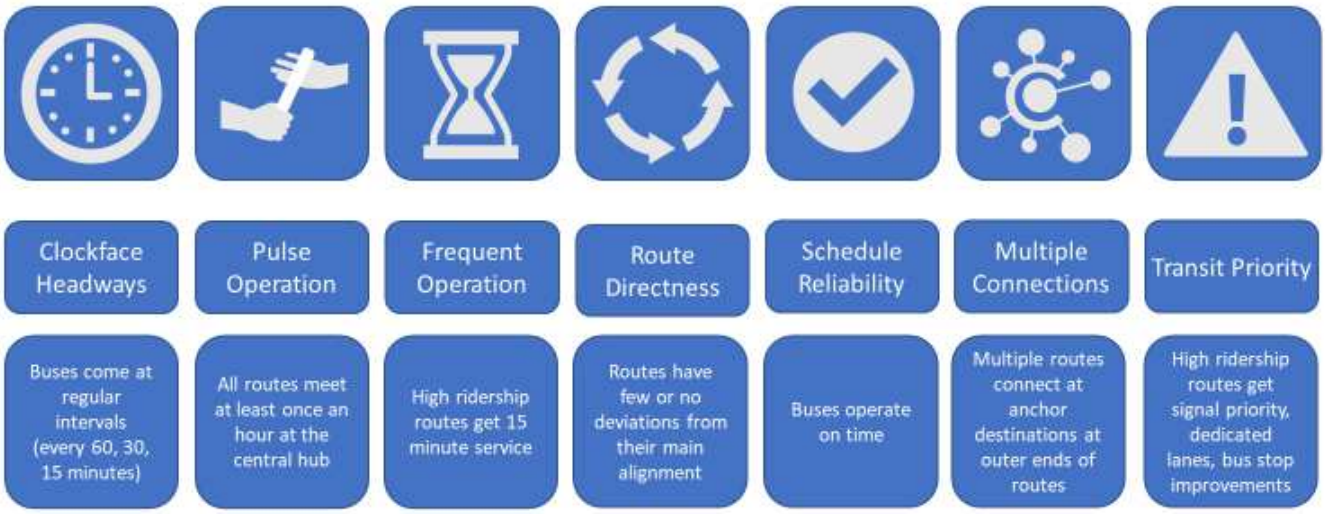
PERFORMANCE RATINGS

This second step of the system analysis combines the productivity results of the pre-pandemic system with the system enacted in September 2020 to provide a more recent, albeit limited, picture of service performance. The goal of this analysis is to provide a more current direction for the possibility of more frequent services in key corridors and alternative, innovative services in low productivity and operationally challenging areas.

The overall rating combines five of the Bus Network Design Best Practices developed by WSP, as illustrated in Figure 20:

- Clockface headways: *buses come at regular intervals (every 60, 30, or 15 minutes).*
- Frequent operation: *high ridership routes get a 15-minute service.*
- Route directness: *routes have few or no deviations from their main alignment.*
- Schedule reliability: *buses operate on time.*
- Multiple connections: *multiple routes connect at anchor destination at outer ends of routes.*

Figure 20: WSP Bus Network Design Best Practices



Two "best practices" were not included in this analysis:

- Pulse Operation: *all routes meet at least once an hour at the central hub.* The Omnitrans system is multi-centric, with several hubs located throughout the service area
- Transit Priority (BRT): *high ridership routes get signal priority, dedicated lanes, bus stop improvements.* Currently, only sbX provides BRT service with some measure of priority treatments.

Special consideration is also given to operating costs per passenger trip. Cost per passenger trip is calculated by dividing the 2019 operating cost, as reported in the National Transit Database (NTD) and inflated to 2019 dollars, for each route by the total number of passengers for that route as identified by Omnitrans. This measure provides a strong indication of effectiveness. The cost has been identified for each route that operates on weekdays, Saturday, and Sunday. For this comparison, the overall cost per passenger trip is used.

The overall "rating" averages the ranking of the performance categories described above. The results are shown in Table 9.

Table 9: September 2020 System – Extrapolated Route Performance

ROUTE		OVERALL RATING	COST PER PASS. TRIP
1	ARMC-San Bernardino-Del Rosa		$5.43
2	Kendall & Palm-Cal State-E St-Loma Linda		$9.78
3	Baseline-Highland-San Bernardino (CCW)		$5.74
4	Baseline-Highland-San Bernardino (CW)		$5.39
6	CSUSB-Sierra Way-San Bernardino		
8	San Bernardino-Mentone-Crafton Hills College		$6.83
10	Fontana-Baseline-San Bernardino		$6.49
12	Fontana-Muscoy-Cal State		$7.30
14	Fontana-Foothill-San Bernardino		$4.65
15	Fontana-San Bernardino-Redlands		$7.83
19	Fontana-Colton-Yucaipa		$7.64
22	N. Rialto-Colton-ARMC		$9.60
29	Kaiser-S Fontana-Bloomington		$10.12
61	Fontana-Ontario-Ontario Airport-Pomona		$6.03
66	Fontana-Foothill-Montclair		$6.65
67	Fontana-Baseline-Chaffey		$9.57
81	Chino-Haven-Chaffey College		$11.25
82	Rancho Cucamonga-Fontana		$8.34
83	Chino-Euclid Ave-Upland		$8.28
84	Chino-Mountain Ave-Upland		$11.29
85	Chino-Montclair-Chaffey College		$8.00
87	Chaffey College-Ontario-Eastvale		
88	Chino Hills-Ramona Ave-Montclair		$11.08
sbX	Green Line CSUSB- VA Hosp		$6.34
215	Riverside-San Bernardino		$5.26
290	San Bernardino-Ontario Mills-Montclair		$12.55
305	San Bernardino-Waterman-Grand Terrace		
319	Yucaipa-Sunnyside-County Line		

Overall Rating Key					
Better than 2	2.0 - 2.4	2.5 - 2.9	3.0 – 3.9	4.0 or worse	New route- no available data

4.5 RESULTS

The routes with significant sub-optimal performance are generally located along the fringes of the Omnitrans service area.

One of Omnitrans' two expressway routes, 290, performs only around average. It connects the transit centers in San Bernardino and Montclair (the system's westernmost transit center) via I-10.

Route 29, a relatively short route partially comprised of a one-way loop, performs fairly well in terms of cost per passenger trip but exhibits a very low overall rating due to its infrequent service, and indirect alignment. It is another "edge" route that connects with the rest of the network at South Fontana.

The western edge of the Omnitrans service area, primarily in and around Chino, is also problematic, with most of the 80 series of routes performing only about average at best in terms of their overall rating and cost per passenger trip. These routes are:

- Route 81, connecting Chaffey College at its northern end with Chino via Ontario Airport
- Route 84, a north-south route with Chino at its southern terminus
- Route 88, the westernmost north-south route in the system, connecting Montclair and Chino

Other routes serving the western edge of the service area that score average in terms of overall rating but somewhat above average in terms of cost per passenger trip are:

- Route 83, a north-south route serving Chino, Ontario, and Upland
- Route 85, which combines east-west service between Montclair and Chaffey College and north-south service between Montclair and Chino

Other routes with average overall ratings are somewhat scattered throughout the service area:

- Route 8, one of two routes connecting San Bernardino with Redlands and Yucaipa
- Route 10, an east-west route along Baseline Road in San Bernardino (different segments of Baseline are served by portions of four different routes)
- Route 22, in the north-central portion of the service area
- Route 67, which serves the segment of Baseline Road west of Route 10 in Fontana

5 MARKET ANALYSIS

5.1 BACKGROUND

The dynamic systems at play in the San Bernardino region are constantly changing. Whereas transit service performance is continually monitored and reported, urban geographical shifts are common across demography and space over a period of time. Thus, the purpose of this market analysis is to examine these underlying conditions and overall travel patterns of the region to better understand the transit changes that could better serve the existing and emerging demand. Specifically, the market analysis reviews:

- Population and employment
- Socio-economic characteristics
- Travel patterns by population segments

The study area is focused on the existing Omnitrans service area, which includes the 15 Omnitrans Joint Powers Authority (JPA) member cities and the three unincorporated areas of San Bernardino County. The 15 JPA member cities are: Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa. The three unincorporated areas are: Bloomington, Mentone, and Muscoy.

In order to analyze the area served by each transit route, areas within a half-mile of an Omnitrans transit route are also included. The final study area, shown in Figure 21, was developed using input from SBCTA and Omnitrans. Figure 22 shows the study area and the study geographic analysis zones that correspond with census tracts – the geographic area that the Census Transportation Planning Products (CTPP) data is aggregated into. The geographic analysis zones are determined by census tract boundaries, which sometimes do not align with corresponding city boundaries. For example, some census tracts cover portions of both Rialto and Colton and both Rialto and Bloomington. The colors delineate the consolidated census tract groups but not to municipal boundaries, which are shown in Figure 21. Incorporating these simplified geographic analysis zones based on census tract boundaries ensures that the data are evaluated consistently and thoroughly. As a result, the study area includes an analysis of travel among 23 geographic analysis zones.

Population and employment densities are shown in Figure 23 and Figure 24, respectively.

Figure 21: Market Analysis Study Area

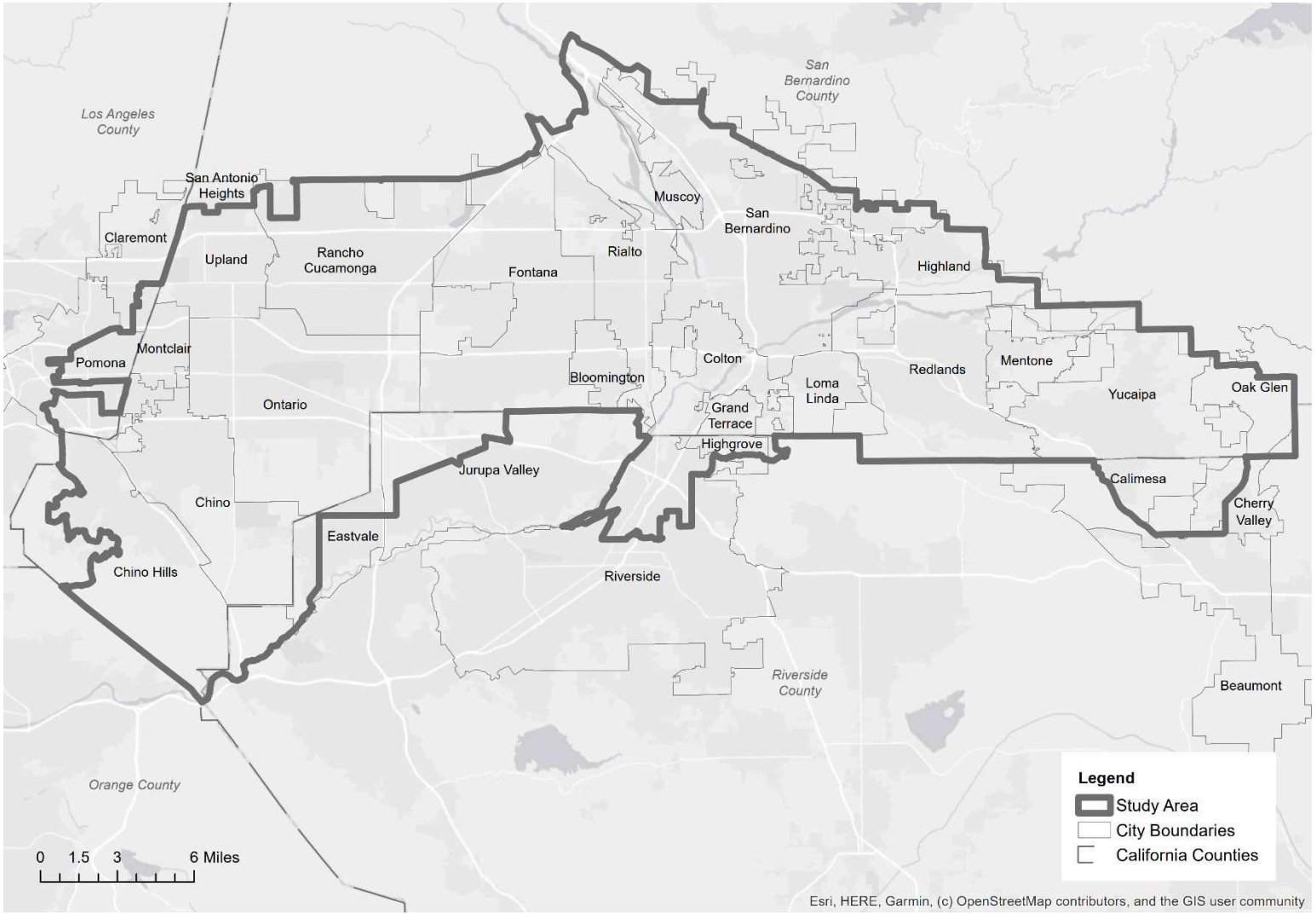


Figure 22: Market Analysis Geographic Analysis Zones

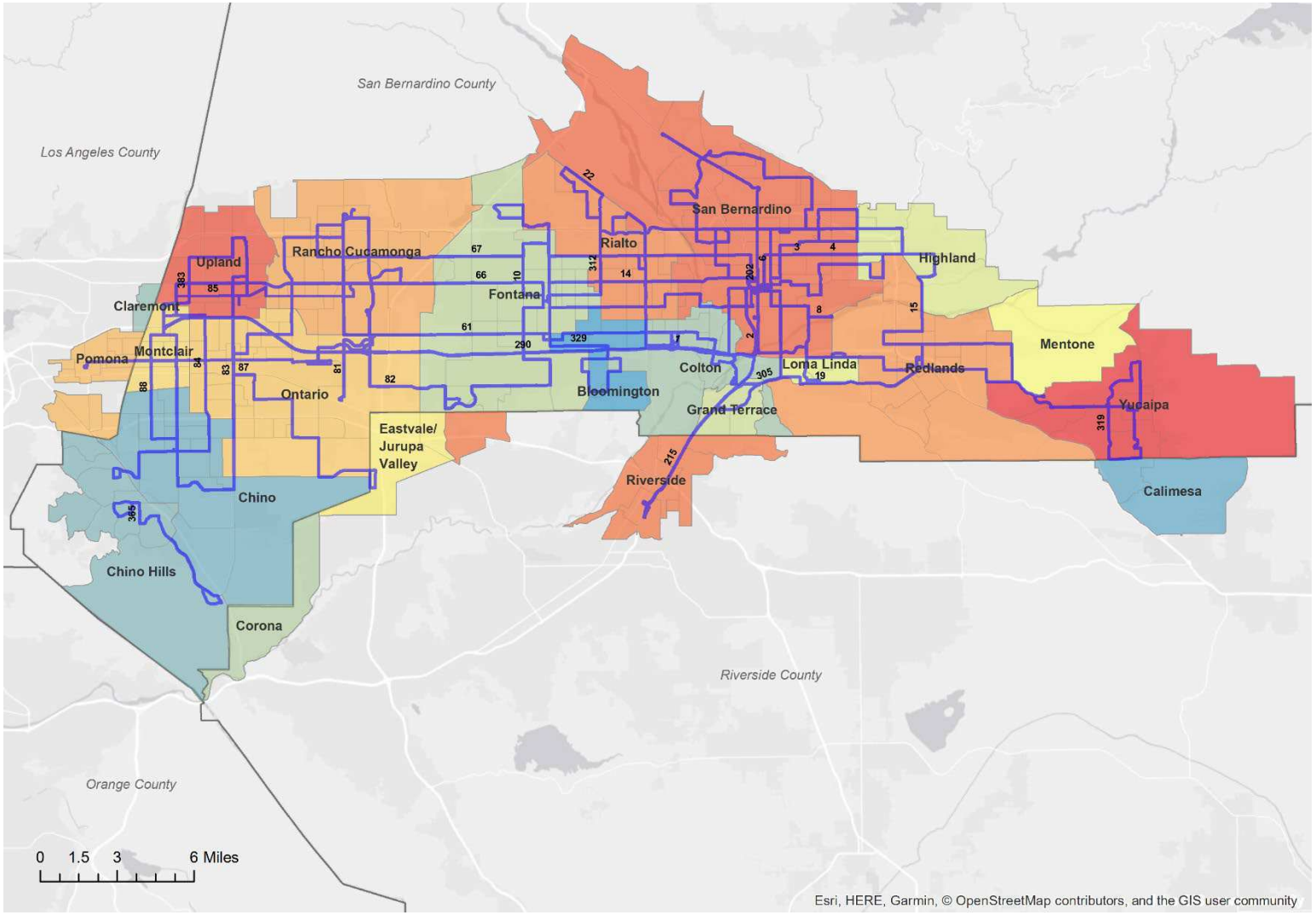


Figure 23: Population Density

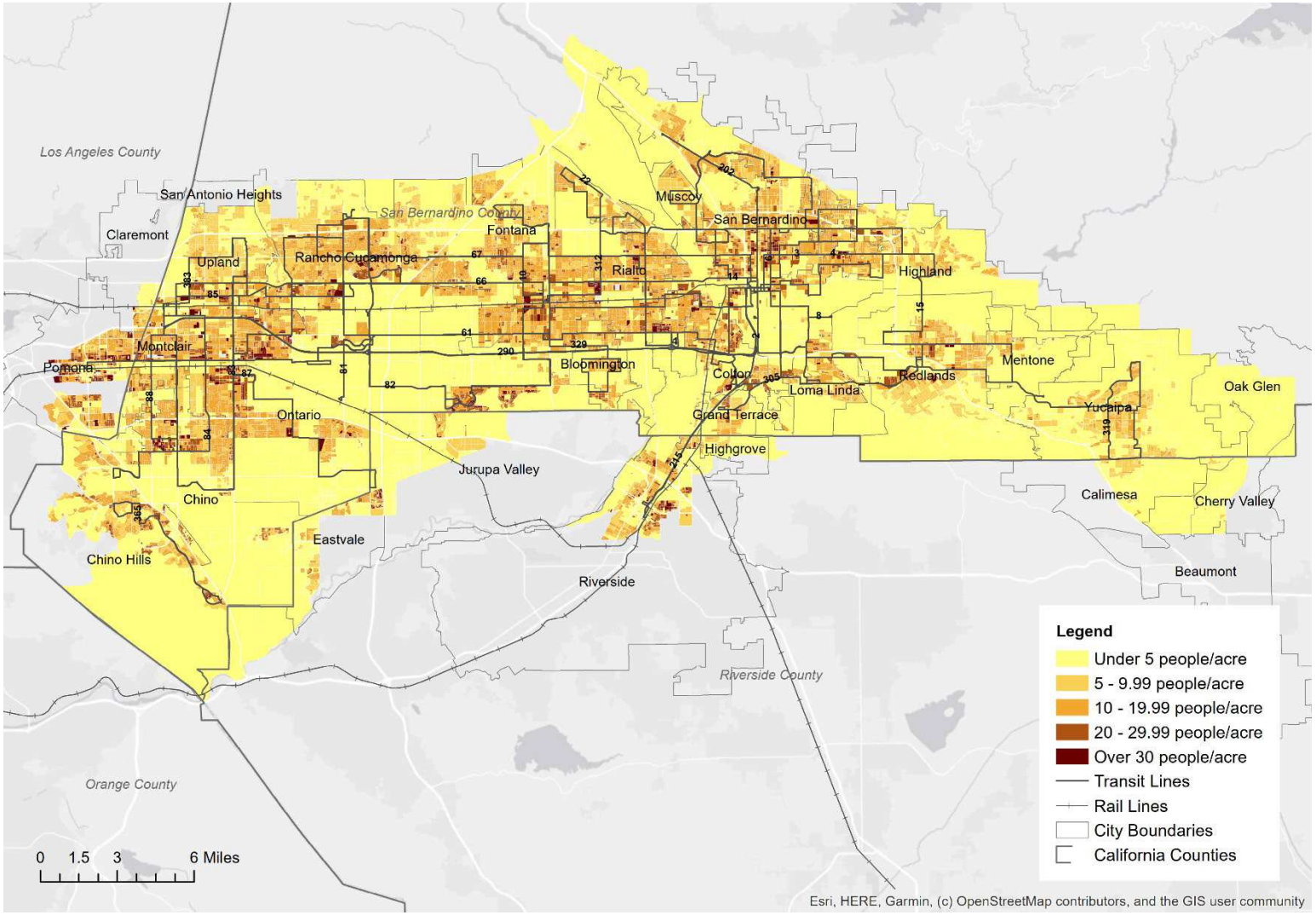
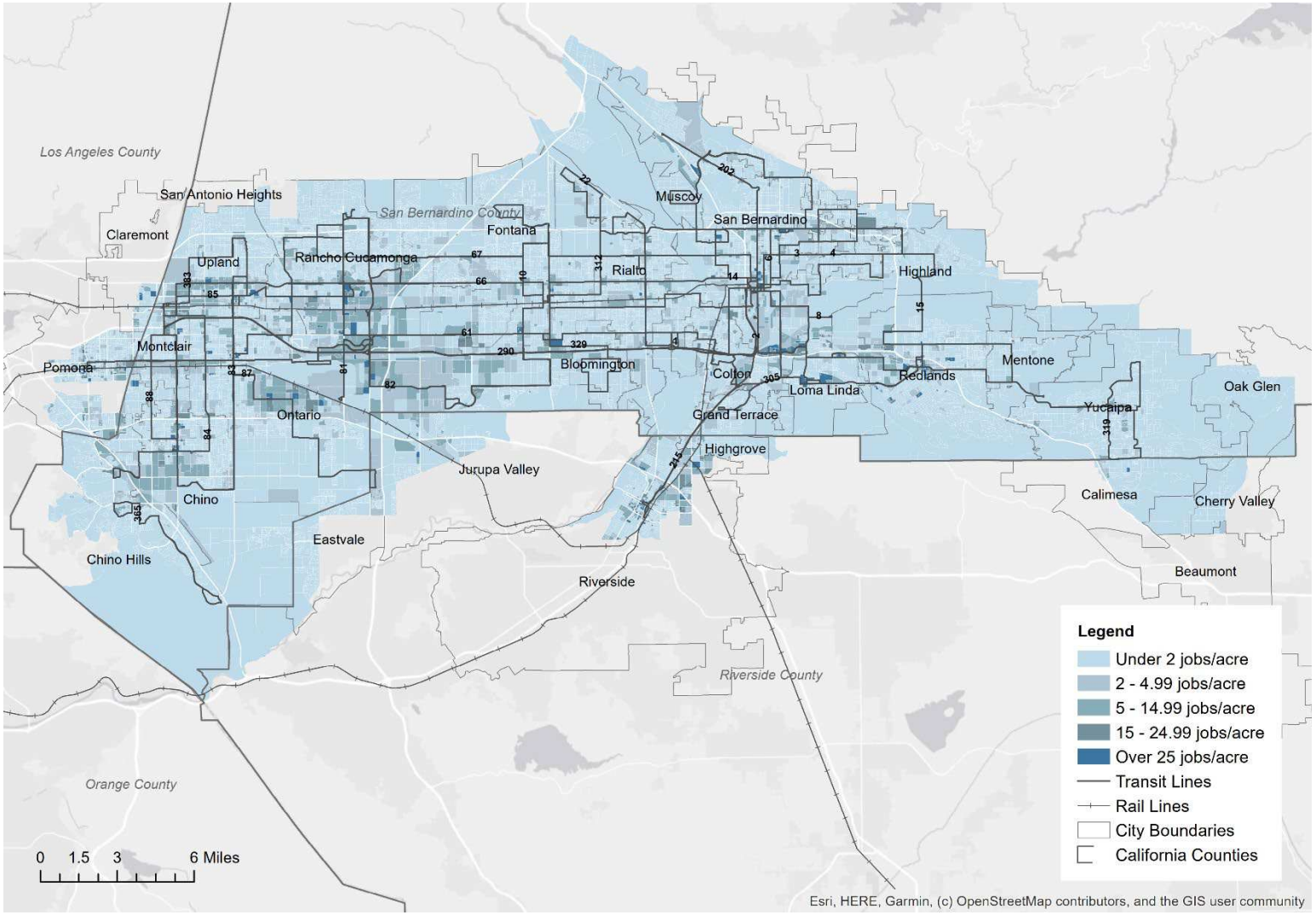


Figure 24: Employment Density



5.2 TRAVEL MARKET ANALYSIS

Census Transportation Planning Product[4] (CTPP) data product based on 2012-2016 five-year American Community Survey (ACS) Data includes information on demographic characteristics, home and work locations, and journey to work travel flows. Using this data, WSP analyzed the journey to work travel markets in the study area.[5] The overall data contains information related to the mode of the trip as well. Table 10 shows the cities within the study area and their corresponding ranking for the highest existing and potential total transit trips based on the CTTP data.

Table 10: Cities[6] with Highest Existing and Potential Transit Trips

CITY	EXISTING TOTAL TRANSIT TRIPS	POTENTIAL TOTAL TRANSIT TRIPS
San Bernardino	1	1
Fontana	3	2
Ontario	2	3
Rancho Cucamonga	4	4
Redlands	9	5
Rialto	5	6
Colton	10	7
Yucaipa	14	8
Upland	8	9
Riverside	13	10
Chino	12	11
Pomona	6	12
Montclair	7	13
Loma Linda	16	14
Highland	17	15
Bloomington	11	16
Grand Terrace	15	17
Chino Hills	18	18
Calimesa	20	19
Eastvale/Jurupa Valley[7]	19	20
Mentone	20	21
Claremont	20	22
Corona	20	23

[4] Data sourced from years 2012-2016

[5] As explained in Section 1, jurisdictional boundaries in this analysis are determined by census tracts. These simplified boundaries include unincorporated areas that fall within larger census tracts in a city or jurisdiction, as some census tracts contain both incorporated and unincorporated land.

[6] These are geographic analysis zones that represent the cities listed.

[7] Eastvale/Jurupa Valley consists of a census tract that contains portions of these cities.

An important distinction between the *existing* trip and *potential* trip data is that the number of existing transit trips is dependent of transit availability: the availability and accessibility of transit affects the mode choice of travelers. Potential transit markets thus may not be apparent in existing transit market analysis data.

Using demographic characteristics, potential transit trips are also analyzed to understand trips that might occur if improved transit service were available. Certain demographic characteristics identify which populations are more transit dependent and lead certain areas to have higher transit potential. Together, these two metrics provide a more complete understanding of the transit travel market.

5.3 KEY POTENTIAL TRAVEL MARKETS

Figure 25 and Figure 26 show "chord diagrams" illustrating existing and potential transit trip travel flows between geographic analysis zones that generally comprise the cities within the study area. The outside bar for each geographic analysis zone represents the total number of trips to and from the zone. The colored lines between each zone represent trip flows between the zones and are scaled according to the number of trips. Lines that appear as an arc within one geographic zone represent internal trips within that area. Wider lines represent higher numbers of trips and thinner lines represent lower number of trips. Using the data shown in Figure 25 and Figure 26, the analysis can visually identify strong existing and potential transit markets. Similar diagrams for each of the communities are included in the Appendix of this report.

Table 11 illustrates the top 35 potential transit travel markets between cities in the study area, as well as the corresponding rank of four travel markets: all trips, existing transit trips, potential transit trips, and potential choice transit trips.

As shown in Table 11, the top five potential transit markets are:

1. San Bernardino's internal travel market, the highest-ranked market for all four travel markets
2. Ontario's internal travel market, which is a top-five market for all travel markets
3. Fontana's internal travel market, which ranks 17th for the existing transit travel market, but top three for other travel markets
4. Rancho Cucamonga's internal travel market, which is a top five market for all travel markets
5. San Bernardino to Redlands, which ranks 14th for the existing transit travel market, but top five for other travel markets

Figure 25: Existing Transit Trips

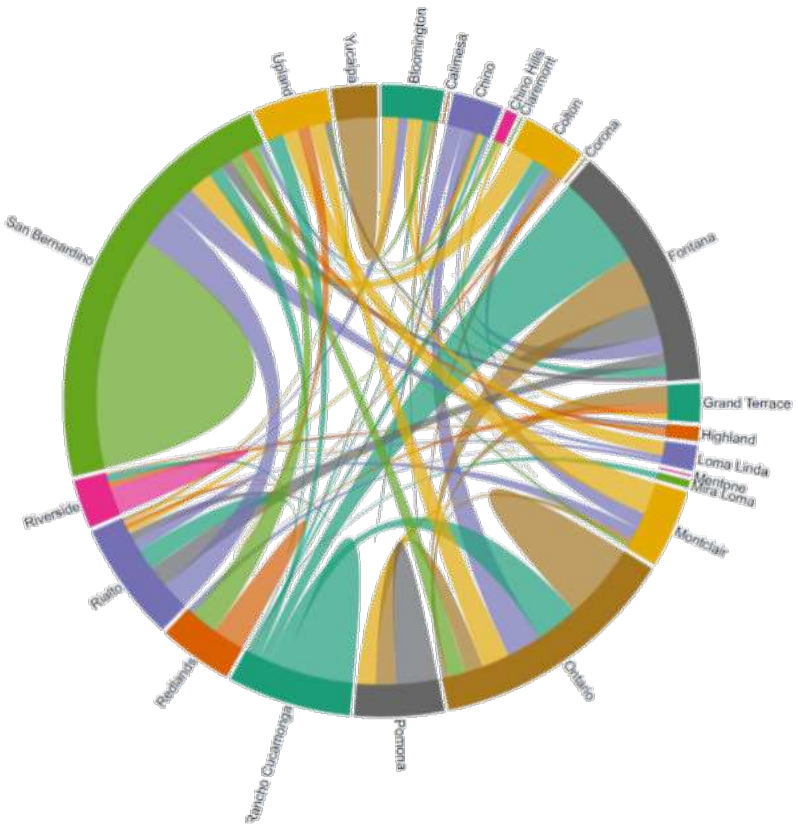


Figure 26: Potential Transit Trips

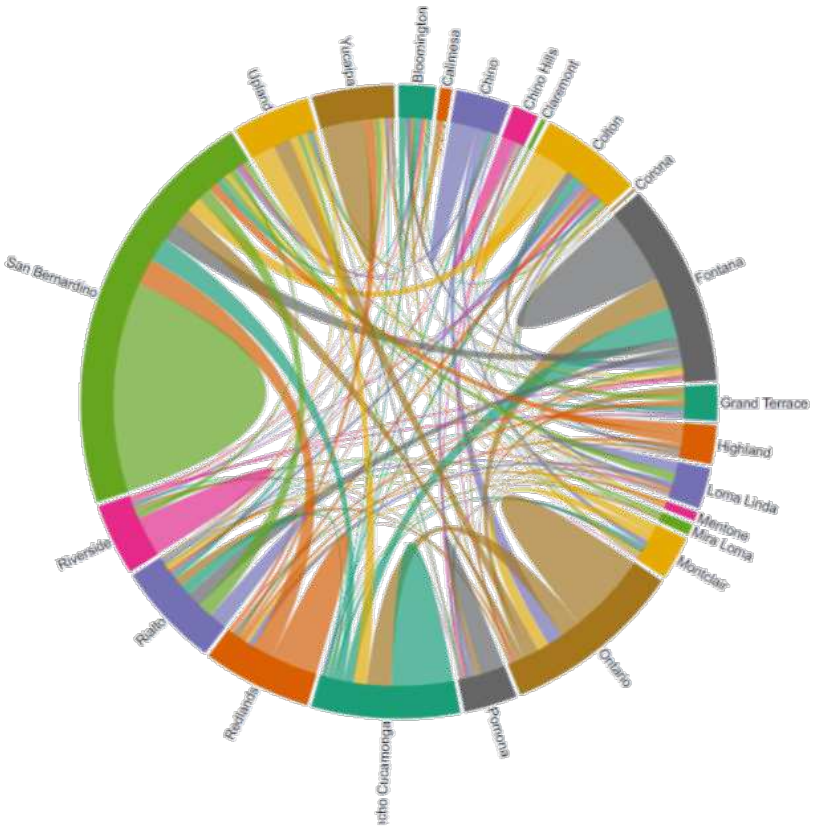


Table 11: Top 35 Travel Markets Between Cities

ORIGIN	DESTINATION	RANK EXISTING ALL TRIPS[8]	RANK EXISTING TRANSIT TRIPS	RANK POTENTIAL TRANSIT TRIPS	RANK POTENTIAL CHOICE TRIPS
San Bernardino	San Bernardino	1	1	1	1
Ontario	Ontario	4	3	2	4
Fontana	Fontana	3	17	3	3
Rancho Cucamonga	Rancho Cucamonga	2	5	4	2
San Bernardino	Redlands	9	14	5	9
Redlands	Redlands	5	18	6	5
Rancho Cucamonga	Ontario	6	6	7	6
Yucaipa	Yucaipa	23	12	8	25
Rancho Cucamonga	Fontana	8	2	9	8
Riverside	Riverside	22	20	10	23
Ontario	Fontana	7	7	11	7
San Bernardino	Rancho Cucamonga	14	33	12	14
San Bernardino	Colton	13	9	13	13
San Bernardino	Fontana	10	28	14	10
San Bernardino	Rialto	15	5	15	17
Upland	Ontario	20	15	16	20
Chino	Chino	11	30	17	12
Pomona	Pomona	31	11	18	35
Upland	Upland	16	46	19	15
Colton	Colton	32	529	20	34
San Bernardino	Ontario	19	19	21	19

[8] Existing transit trip data source is CTPP (Census Transportation Planning Products) data based on the 2012-2016 American Community Survey.

ORIGIN	DESTINATION	RANK EXISTING ALL TRIPS[8]	RANK EXISTING TRANSIT TRIPS	RANK POTENTIAL TRANSIT TRIPS	RANK POTENTIAL CHOICE TRIPS
Rialto	Fontana	21	17	22	21
Upland	Rancho Cucamonga	18	23	23	18
Ontario	Montclair	28	40	24	30
Ontario	Chino	12	10	25	11
San Bernardino	Highland	17	34	26	16
Rialto	Rialto	24	37	27	22
San Bernardino	Loma Linda	56	21	29	61
Chino Hills	Chino Hills	26	529	29	26
Yucaipa	Redlands	25	529	30	24
Rialto	Rancho Cucamonga	33	22	31	32
Loma Linda	Loma Linda	69	66	32	74
Highland	Highland	43	66	33	46
Rialto	Colton	55	58	34	56
Fontana	Bloomington	27	40	35	27

Note: the rank of 529 is a proxy number for last place (tied)

TRAVEL DESIRE LINES

Highlighted in the following figures, the most notable trend across all four travel markets is travel moving east and west. Higher trip flows are represented by thicker lines and circles with the colors blue and red representing the least and most trips respectively.

Figure 27 shows an overview of all existing trips between areas based on the CTPP data. East-west travel between Redlands, San Bernardino, Fontana, Rancho Cucamonga, Ontario and Chino has the largest number of trips.

Figure 28 shows the existing transit trips between areas based on the CTPP data. The existing transit trips have the same strong east-west travel pattern between Redlands, San Bernardino, Fontana, Rancho Cucamonga, Ontario and Chino.

Figure 29 shows potential transit trips between areas, with San Bernardino remaining the strongest transit hub. There are several markets with notable differences between the existing and potential transit markets shown in Figure 28 and Figure 29, where the existing transit market is ranked substantially lower than the potential transit market. This may suggest that there is a higher demand for service than is currently being served. Such markets include Upland – Upland, Colton – Colton, Ontario – Montclair, Chino Hills – Chino Hills, Yucaipa – Redlands, Loma Linda – Loma Linda, Highland – Highland, and Rialto – Colton.

Figure 30 shows the same trip data as Figure 29, but any connection that is not within the top 35 travel markets is colored gray for visual clarity. Similarly, Figure 31 shows the same trip data as Figure 30 with any connections outside the top 35 travel markets colored gray.

Figure 27: Travel Desire Lines – Existing All Trips-All Modes

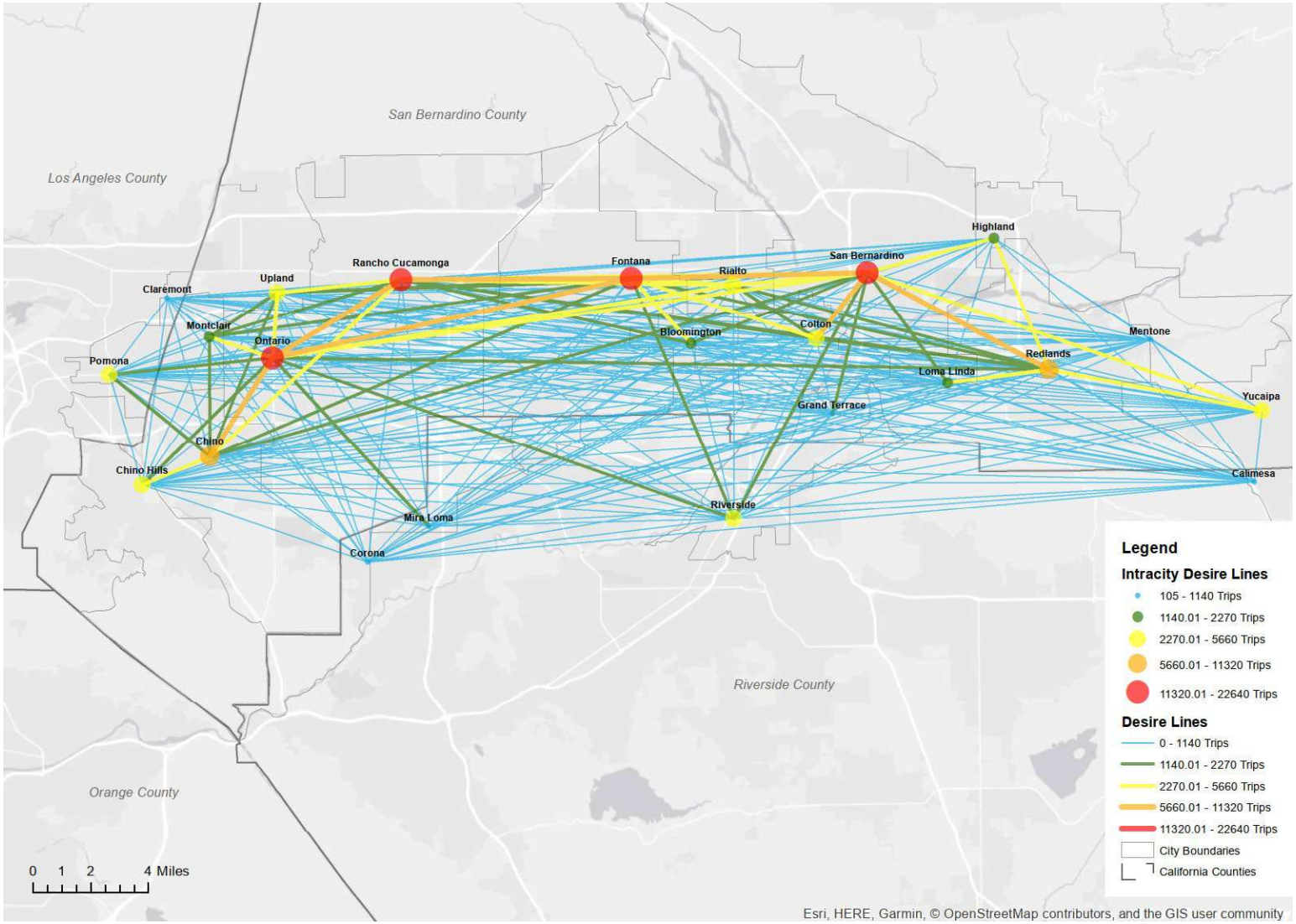


Figure 28: Travel Desire Lines – Existing Transit Trips

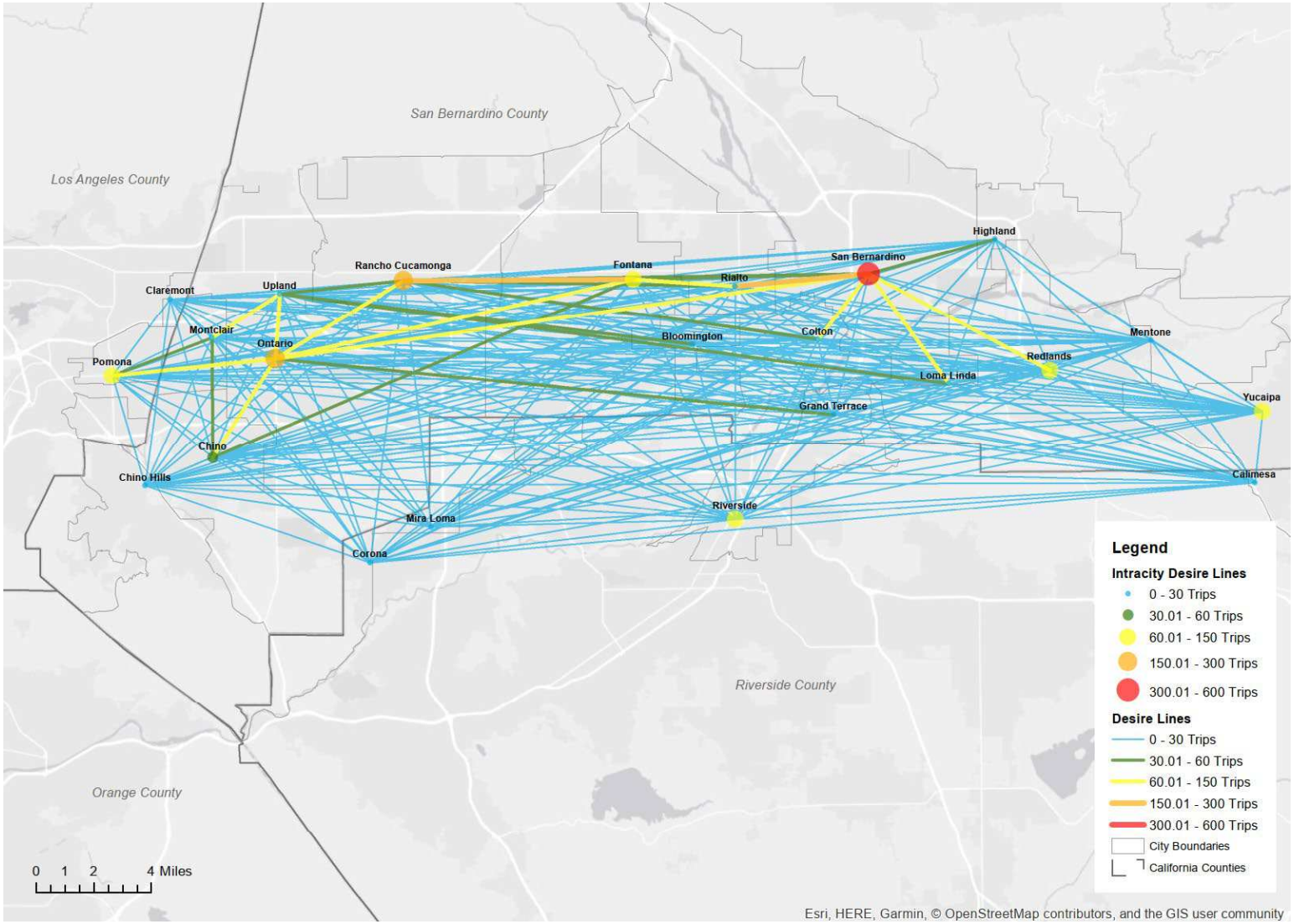


Figure 29: Travel Desire Lines – Potential Transit Trips

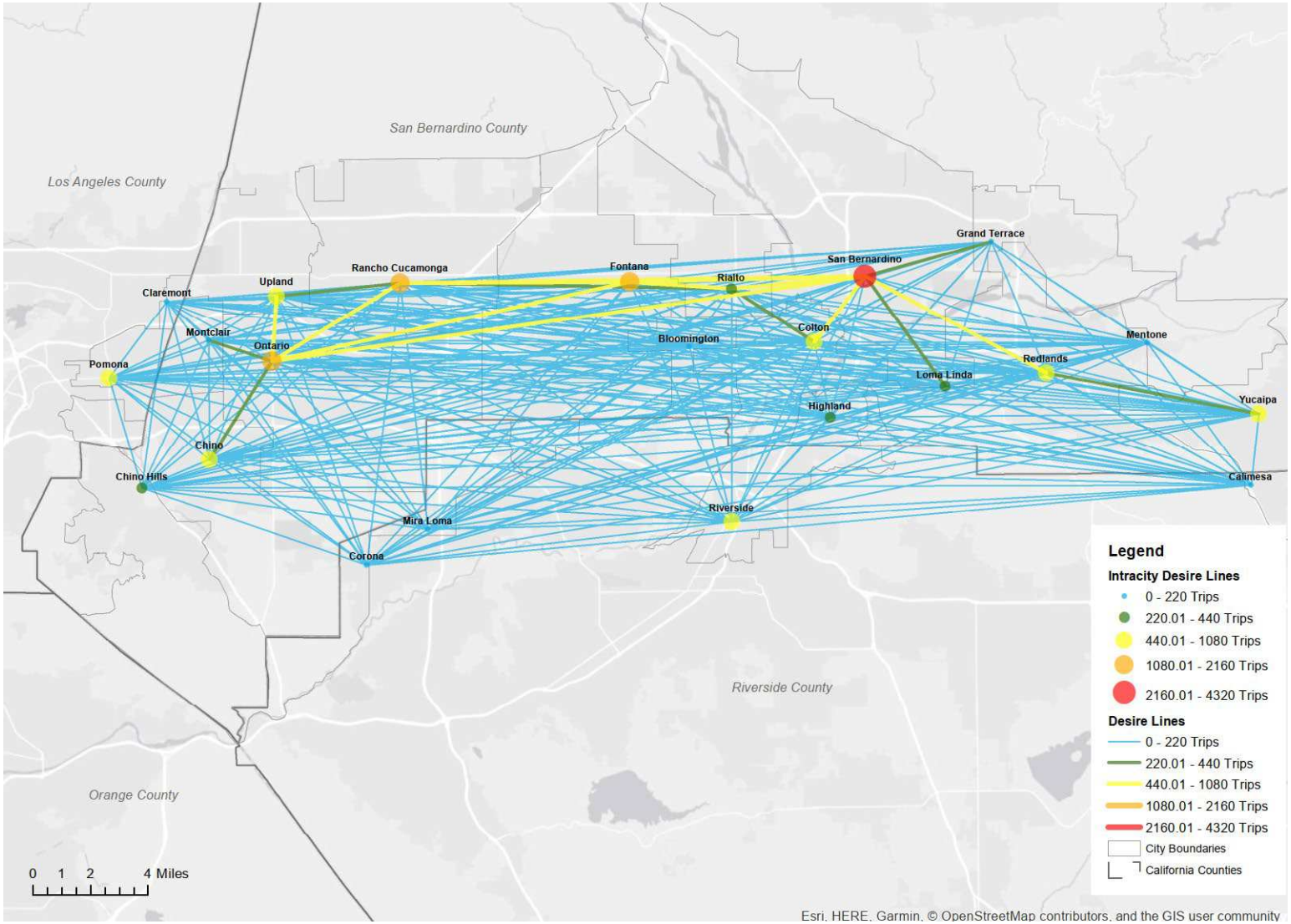


Figure 30: Travel Desire Lines – Potential Choice Transit Trips

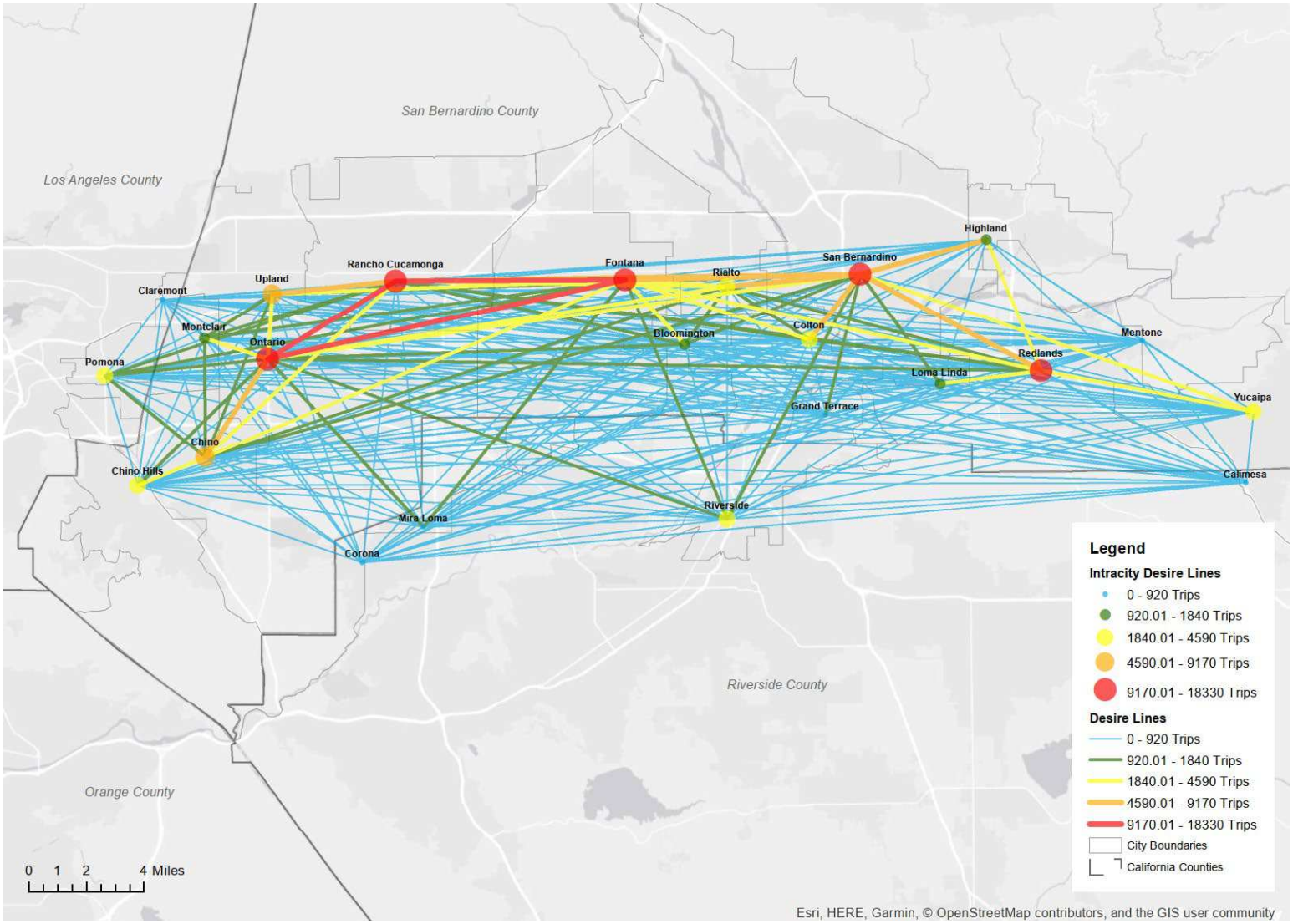


Figure 31: Travel Desire Lines – Key Existing Transit Markets (Top 35)

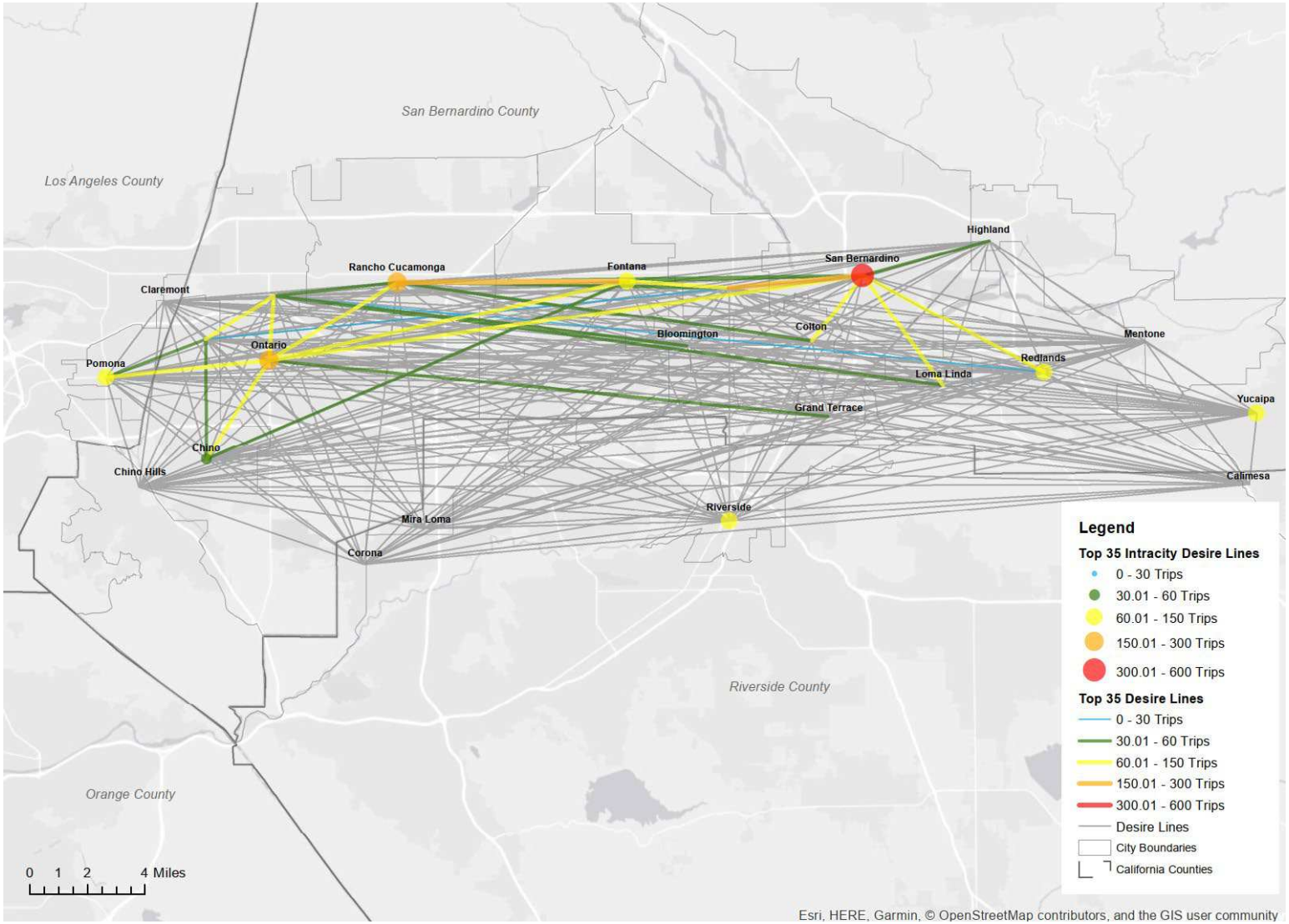
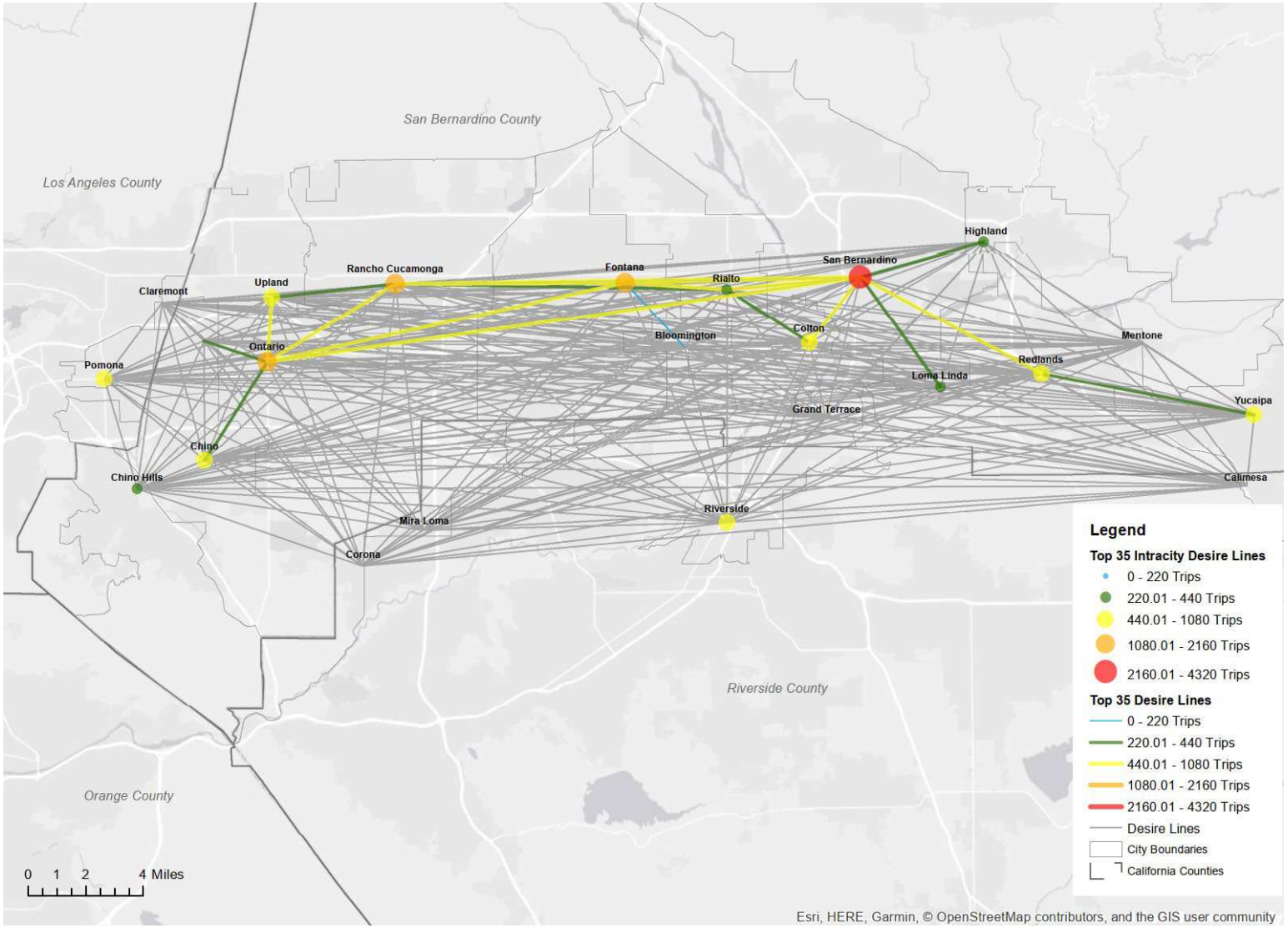


Figure 32: Travel Desire Lines – Key Potential Transit Markets (Top 35)



5.3.1 WHICH KEY TRAVEL MARKETS ARE UNDERSERVED?

By comparing the key existing and potential travel markets to the Omnitrans transit service (pre-pandemic, ConnectForward changes are noted) that connects them, potential transit service improvement opportunities can be identified to help ensure that transit is serving those markets that depend on it.

Table 12 explains key transit travel markets representing potential transit service improvement opportunities, as illustrated in Figure 33 and Figure 34. Colton, in particular, exhibits strong unserved demand with potential for future improvement, especially since there are currently no north-south or local routes. San Bernardino is the strongest transit and overall travel market in the region multiple high potential destinations surrounding this hub. In addition to the listed markets, there are also various large distribution centers that act as key destinations for off-peak trips but can be difficult to serve with conventional transit due to their location in large industrial areas and 24/7 employment. Figure 35 and Figure 36 show potential transit trips within the City of Colton and San Bernardino, respectively, at the census tract level. The patterns suggest that there are opportunities for trips within each city and that these destinations are dispersed, supporting the opportunity for microtransit service.

Table 12: Key Travel Markets for Potential Transit Service Improvement Opportunities

TRANSIT MARKETS	TRAVEL MARKET STRENGTH	EXISTING TRANSIT ROUTES	SERVICE	OFF- PEAK TRAVEL TIME (MINUTES)[9]		METRO LINK
				TRANSIT	AUTO	
San Bernardino-Rancho Cucamonga	Strong Overall and Transit Market	290, 81/82 14-66	Slow	90 – 120	30	V
Pomona-Montclair	Strong Existing Transit Market	61 87-88 Foothill Transit 480, Silver Streak	Slow (Silver Streak-Fast)	30 – 45	10 – 15	V
Rancho Cucamonga-Ontario	Strong Overall and Transit Market	66-83 81-61 83-85 66-84-61, 85-84-61	Slow	60	15	V
Rialto-Fontana	Strong Overall and Transit Market	14 15	Slow	35	10 – 15	V
San Bernardino-Colton	Strong Overall and Transit Market	Route 1	Direct, Slow	35 - 40	10	
Colton	Strong Internal Potential Transit Market and Weak Existing Transit Market	East-west through routes	Varied. No north-south or local routes Unserved demand			
San Bernardino	Strong Overall and Transit Market	Various routes	Varied			

[9] Source: Google Maps estimated travel time between the following intersections: San Bernardino-Rancho Cucamonga: N D St & W 3rd St to Civic Center Dr & Civic Center Driveway; Pomona-Montclair: W Mission Blvd & S Garey Ave to Central Ave & Benito St; Rancho Cucamonga-Ontario: Civic Center Dr & Civic Center Driveway to Euclid Ave & Holt Blvd; Rialto-Fontana: W Rialto Ave & S Palm Ave to Wheeler Ave & Upland Ave; San Bernardino-Colton: N D St & W 3rd St to N La Cadena Dr & E D St.

Figure 33: Key Existing Transit Markets (Top 35) and Existing Transit Service

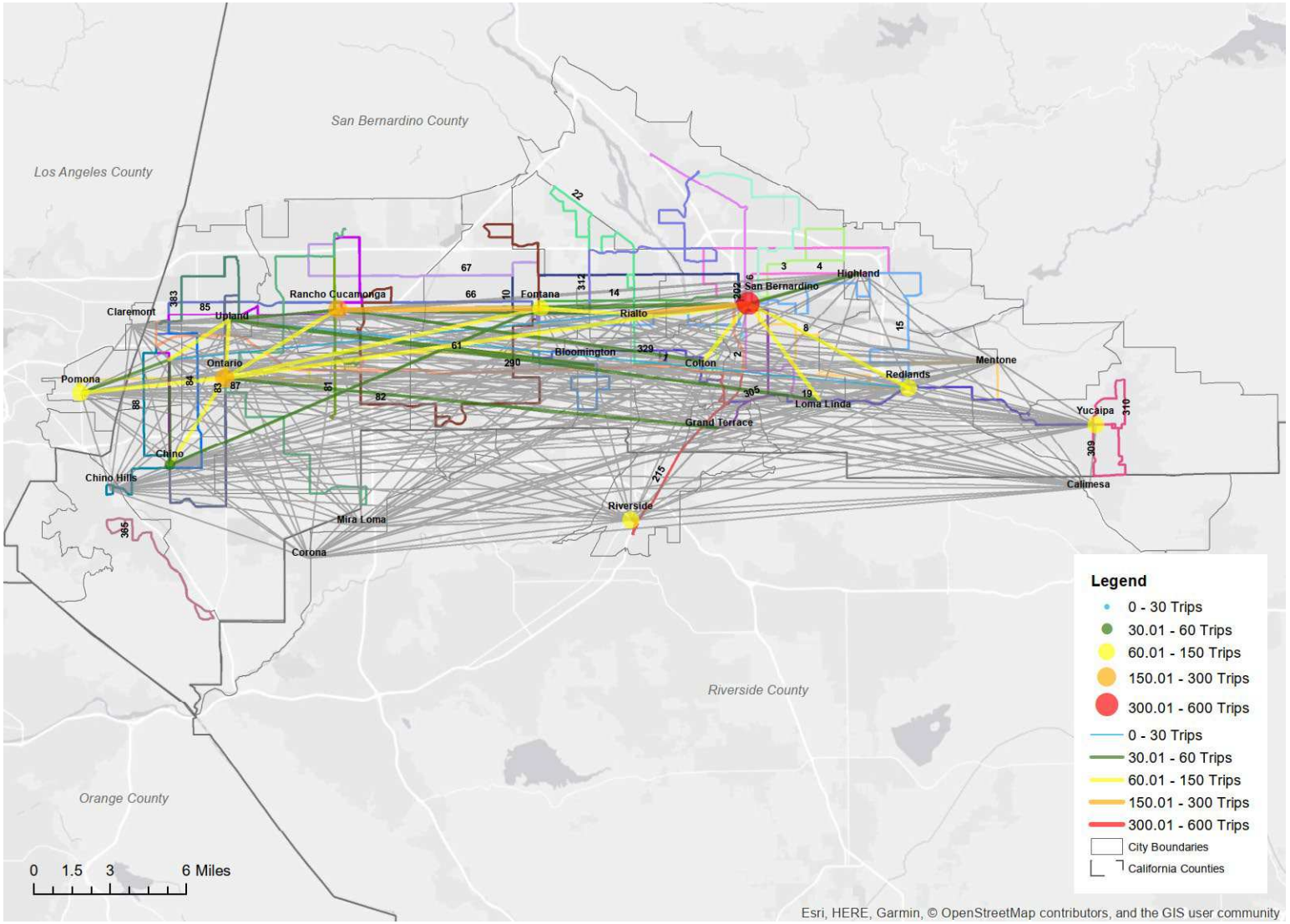


Figure 34: Key Potential Transit Markets (Top 35) and Existing Transit Service

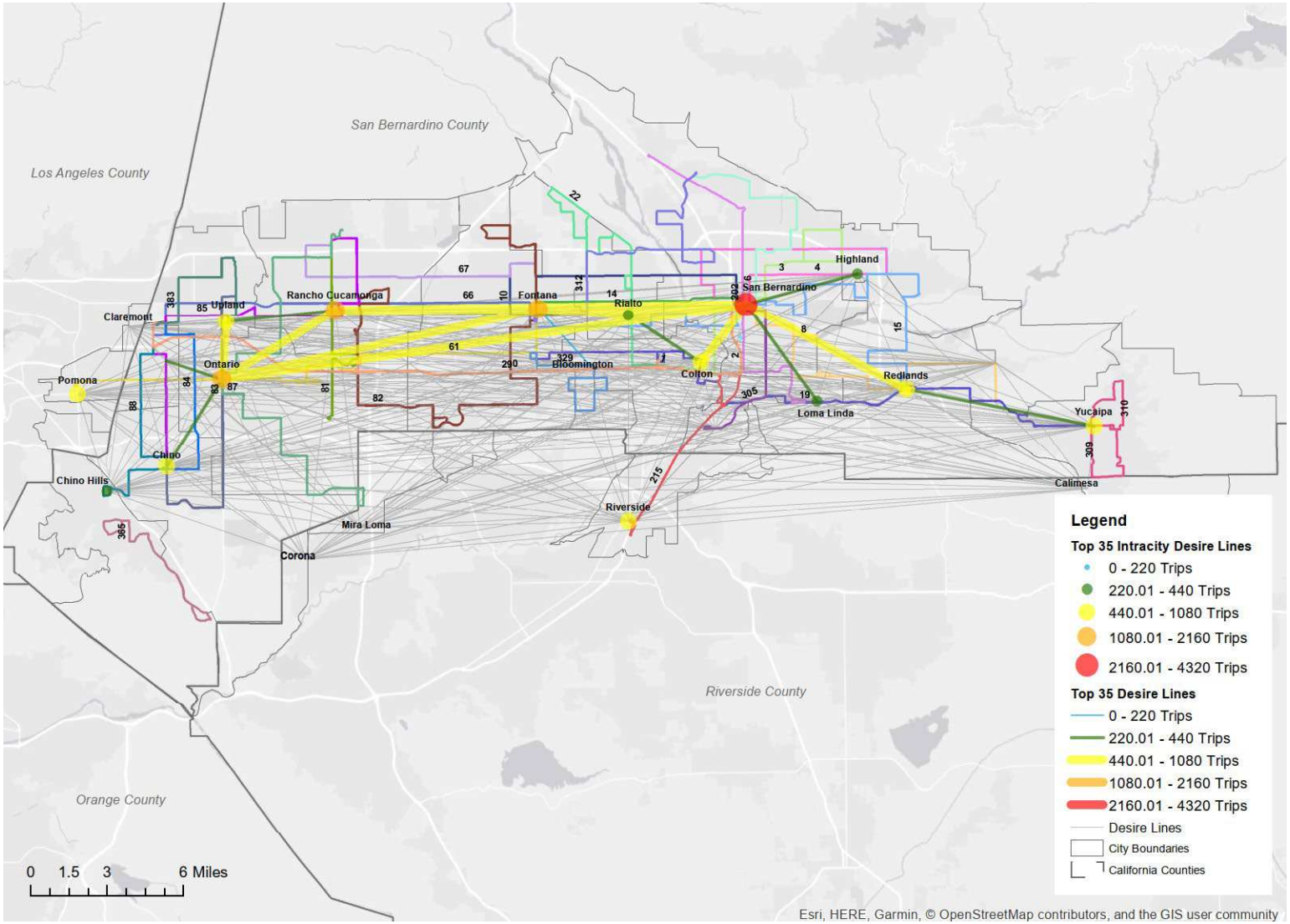


Figure 35: Potential Transit Trips Within Colton

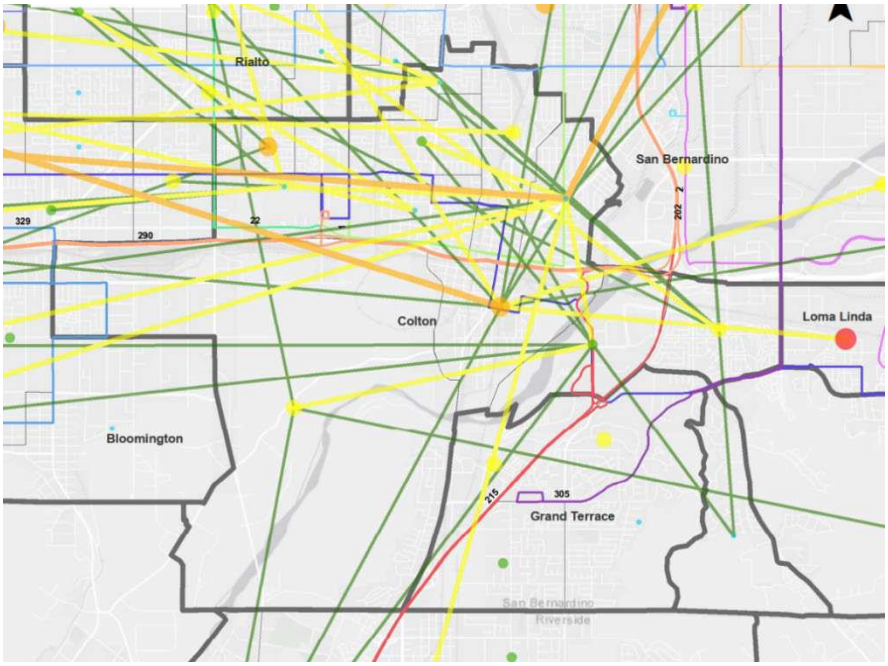
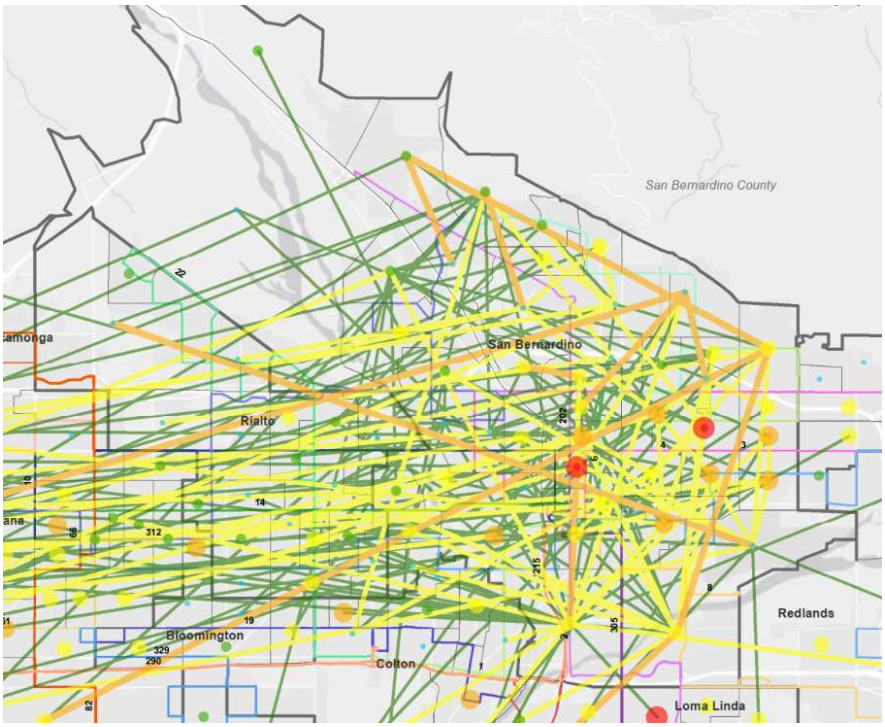


Figure 36: Potential Transit Trips Within San Bernardino



KEY IDEAS / CONCEPTS TO DISCUSS AND DEVELOP FURTHER

Based on the characteristics of each market identified above, three main concepts for improving transit have been identified. These concepts can be grouped into the following categories:

- High Capacity Transit (HCT): express service, BRT, or other transit priority features
- Route optimization: shortening routes, eliminating routes, changing service times, or replacing routes and investing in other key markets
- Innovative transit solutions: microtransit, micromobility, and mobility hubs

Expanded HCT service has been previously analyzed for the Metro-Valley. The San Bernardino Long Range Transit Plan (LRTP), 2010, identified 10 BRT corridors as part of its package of VISION premium transit services:

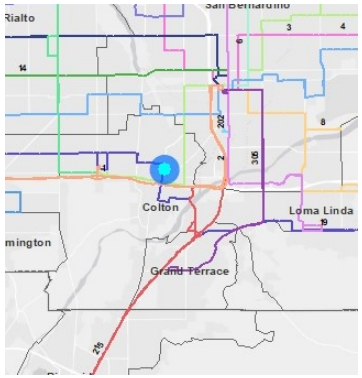
- E Street (subsequently implemented as the sbX BRT line)
- Foothill Boulevard East
- Foothill Boulevard West (in part currently being developed as part of the WVC BRT line)
- Mountain/Euclid Avenues
- Holt Avenue/4th Street (in part currently being developed as part of the WVC BRT line)
- San Bernardino Avenue
- Grand/Edison Avenues
- Sierra Avenue
- Riverside Avenue
- Haven

The eight key transit travel markets representing potential transit service improvement opportunities are illustrated in Figure 37 and described as follows:

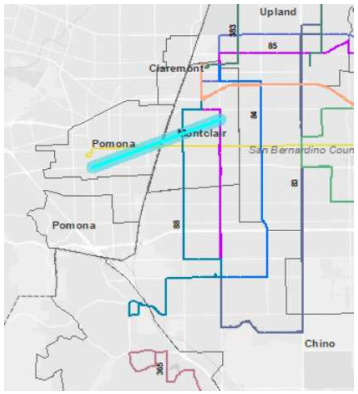
- **San Bernardino-Rancho Cucamonga** is an opportunity to explore high capacity transit to improve the travel speeds in the corridor and serve the strong transit market. This is the center segment of a larger corridor that extends from Chino-Ontario-Upland-Rancho Cucamonga-Fontana-San Bernardino-Redlands. While service does overlap with Metrolink, the two markets may be distinct, and a connection is proposed as a BRT corridor in the LRTP. Other service changes to the local routes that serve the corridor would also need to be considered.
- **Pomona-Montclair** is an opportunity to explore stop optimization and transit priority treatments to increase the transit travel speeds in this strong transit market. While service does overlap with Metrolink, the two markets may be distinct. A BRT line making this connection is included in the LRTP and being developed as the WVC. Local connections are made by Foothill Transit.
- **Rancho Cucamonga-Ontario** has similar opportunities as described above with San Bernardino-Rancho Cucamonga. The WVC will make this connection.
- **Rialto-Fontana** has similar opportunities, as described by San Bernardino-Rancho Cucamonga. The BRT lines on Foothill Boulevard and San Bernardino Avenue would provide connections, as does Route 14.
- **San Bernardino-Colton** is an opportunity to review Route 1 and the layover to increase the speed of transit service between these two strong transit travel markets. The San Bernardino Avenue BRT line proposed in the LRTP connects these two communities.
- **Colton** has a strong internal potential transit market with dispersed destinations that could be served well by creating a mobility hub and serving the market with microtransit.
- **San Bernardino** presents perhaps the strongest opportunity in the region to enhance to SBTC as a key mobility hub to better serve the surrounding strong transit market. This location presents an opportunity for both micromobility and microtransit to serve both short and long trip durations.
- The various **large distribution centers** act as key destinations with for off-peak trips that are difficult to serve with conventional transit, but present an opportunity to have focused transit services, especially to serve the second and overnight shift job market.

Figure 37: Key Transit Travel Markets Representing Potential Transit Service Improvement Opportunities

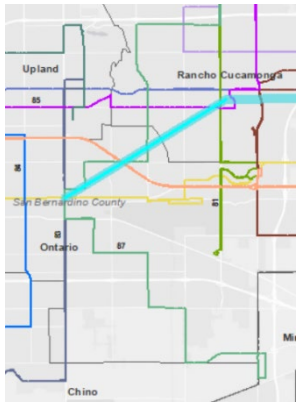
Colton Internal



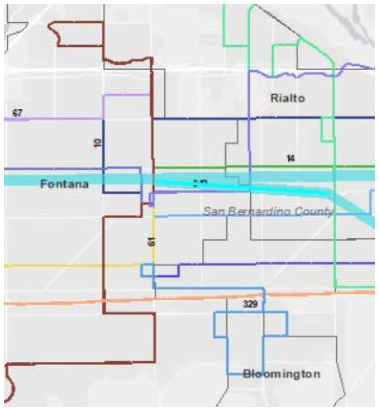
Pomona-Montclair



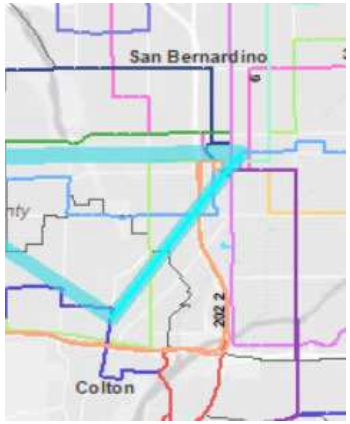
Rancho Cucamonga-Ontario



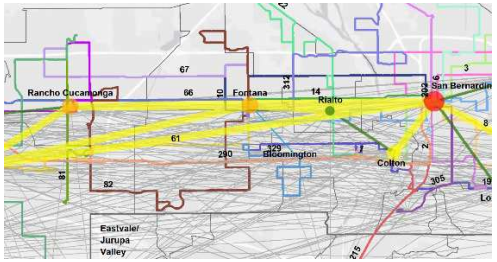
Rialto-Fontana



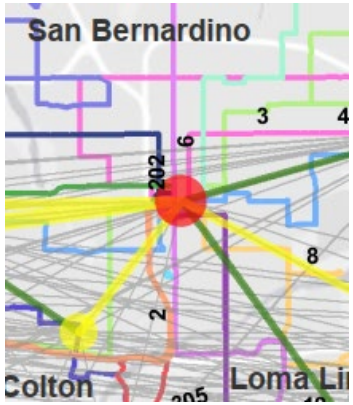
San Bernardino-Colton



San Bernardino-Rancho Cucamonga



San Bernardino Internal



5.3.2 IS IT TRUE TRANSIT ROUTES BENEFIT FROM CHANGE?

Nine key transit travel markets representing potential transit service improvement opportunities are listed below, along with their travel market rank for all trips, transit trips, potential transit trips, and potential transit trips.

Table 11 identifies the total population and employment for each route as well as the population and employment per route mile.

Table 13: Nine Key Travel Markets – Population and Employment

ROUTE	POPULATION ACCESS		EMPLOYMENT ACCESS	
	TOTAL	POPULATION PER ROUTE MILE	TOTAL	POPULATION PER ROUTE MILE
15	99,917	3,122	30,896	966
19	100,589	2,719	50,299	1,359
81	26,869	1,279	35,164	1,674
84	47,897	4,790	18,636	1,864
88	47,116	3,365	21,893	1,564
290	58,177	1,003	66,474	1,146
305	20,363	1,851	17,192	1,563
309/310	30,709	2,559	4,147	346
365	30,440	2,537	3,442	287

- **Route 15** performed well on both the weekdays and weekends with respect to the cost per trip. The Redlands-Highland portion of the route is a weak market. Along the total route, there is a medium level of population density with pockets of low density. However, along the total route, there is generally little employment. Within the Redlands-Highland portion of Route 15, the population density is generally low, with pockets of medium density at each terminus. Along this same portion, there is very little employment.
- **Route 19** performed well on both the weekday and weekend with respect to the cost per trip. The Redlands-Yucaipa portion of the route is a strong market. However, the Fontana-Colton-Grand Terrace-Loma Linda-Redlands portion is a weak market. Along the total route, there is generally a medium to high level of population density. There are pockets of low density in Colton and between Redlands and Yucaipa. There is generally little employment along the route, but small pockets of moderate employment exist in Loma Linda and the border of Fontana and Bloomington.
- **Route 81** performed well on weekdays and less well on the weekends with respect to the cost per trip. It was modified as part of Connect Forward. Chino-Ontario-Rancho Cucamonga is a strong market served by Routes 83 and 84. However, Chino-Rancho Cucamonga is a weak transit market and deleted under the ConnectForward modification. There is medium level population density in the northern portion of the total route and a low level of density in the southern. Pockets of higher density development are on the border of Rancho Cucamonga and Ontario. Conversely, there is more employment in the southern portion of the route than there is in the northern.

- **Route 84** performed well on weekdays and less well on the weekends with respect to the cost per trip. Weekend service is now outsourced as part of ConnectForward. The Chino-Ontario-Montclair portion is a strong market. The area is competing with Routes 85, 88, and to some extent 83. There exists a varied level of population density along the entire route. In general, there is little employment along the entire route. Notably, there is little population density at the route termini. Montclair has more employment, with the universities as a major employment center, than the route terminus in Chino, but this level is still moderately low.
- **Route 88** performed well on weekdays and less well on weekends with respect to the cost per trip. Service is now outsourced on weekends as part of ConnectForward. Both the Chino Hills-Chino portion and the Chino-Montclair portion of the route are weak transit markets, with cannibalization occurring alongside Routes 84 and 85. Chino Hills is a weak transit market for all routes connecting through it. The entire route generally has a medium level of population density and little employment. Within the Chino Hills-Chino portion, population density is lowest in Chino Hills. Employment in this area is moderately low but higher than in northern Chino. Within the Chino-Montclair portion of the route, population density is generally moderate, and there is very little employment.
- **Route 290** did not perform well on weekdays. The Ontario-San Bernardino portion of the route is a strong market, yet the Montclair-San Bernardino portion of the route is weak. The entire route has mostly low levels of population density, with some pockets of medium density in Montclair, Ontario, and Fontana. The route generally has little employment, with higher levels in the identified pockets of lower population density (except for eastern Fontana, where population density and employment are mostly equal).
- **Route 305** Both the San Bernardino-Grand Terrace and Loma Linda-Grand Terrace portions of the route are weak markets. Service has been reduced under Connect Forward. The entire route has variable levels of population density, with higher density to the south. While there is generally little employment along the route, some pockets of moderate employment exist in San Bernardino. Population density is greatest in the Loma Linda-Grand Terrace portion of the route, while employment is at its lowest portion.
- **Route 309 & 310** did not perform well on both the weekdays and the weekends with respect to cost per trip. However, Yucaipa has a strong internal transit market. The entire route has quite varied levels of population density but consistently little employment. These routes were revised, weekend service dropped, and combined as part of ConnectForward.
- **Route 365** performed poorly on both the weekdays and the weekends with respect to cost per trip. This route will be eliminated and replaced by microtransit. Along this route, there are varying levels of population density, with both termini showing high density. The route has consistently very little employment. It has been eliminated as a fixed route and replaced with OmniRide microtransit service as part of ConnectForward.

KEY IDEAS / CONCEPTS TO DISCUSS AND DEVELOP FURTHER

Eight key routes with the potential for service improvement opportunities are listed below and illustrated in Figure 38. As an outcome of the market analysis, the following are offered as considerations only, as they are generally in the realm of short-range service planning. Recommended concepts are included in Chapter 6.

Figure 39 compares the population and employment density along the eight routes within a ¼-mile buffer, providing a relative comparison of coverage by route.

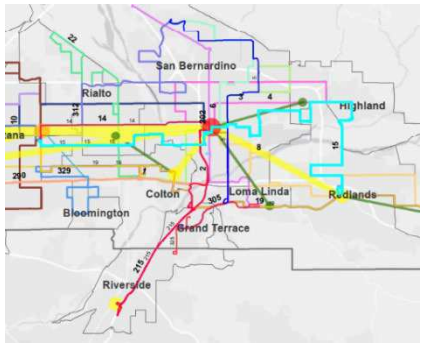
- **Route 15:** Consider shortening the route by eliminating service to Highland and Redlands, which is a weak transit market. Consideration can be given to route modifications once Arrow service is in full operation.
- **Route 81:** Consider reducing weekend service or replacing weekend service with limited weekend microtransit service. A mobility hub at Foothill and/or Baseline could serve as the regional connection to the microtransit service area to north with Chaffey College.
- **Route 84:** Omnitrans has already taken action as part of ConnectForward by using a smaller vehicle and outsourcing weekend service.
- **Route 88:** Consider reducing weekend service (service was outsourced under ConnectForward) or shortening the route by eliminating service between Chino and Chino Hills, which is served by microtransit.
- **Route 290:** Consider shortening the route by eliminating service west of Ontario.
- **Route 309 & 310:** Recent changes that were made to this route include combining the routes as Route 319 as part of ConnectForward. This analysis shows that the area served may also have the potential to succeed as microtransit.
- **Route 365:** The September 2020 service changes that are already planned as implementing microtransit are supported by this analysis.

The population and employment of each route varies based on the area served ad, of course, the actual length of the route. Route 19 and Route 15 serve highly populated areas - with about 100,000 residents - generally within walking distance. Both routes are very long, however; the population per route mile provides a better comparative reference. Route 84, which is significantly shorter than Routes 15 and 19, serves the highest amount of population per route mile, at 4,790 (compared with 3,122 for Route 15 and 2,719 for Route 19, respectively).

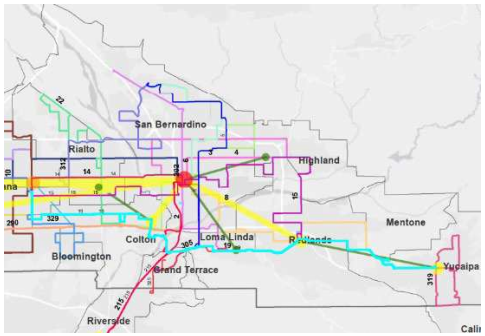
Employment also varies by route, length and areas served. For example, nearly 31,000 jobs fall within the buffer of Route 15, but the number of jobs per route mile is under 1,000. Along Route 81, the number of jobs served is about half of that along Route 15, but its length is much shorter. The density of jobs, at over 1,800, is almost double that of Route 15.

Figure 38: Potential Route Revision and Improvement Opportunities

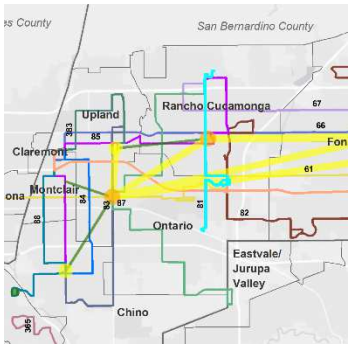
Route 15



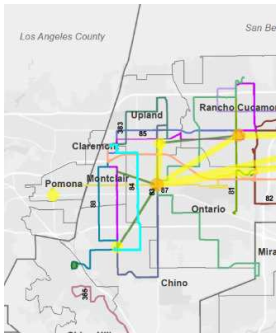
Route 19



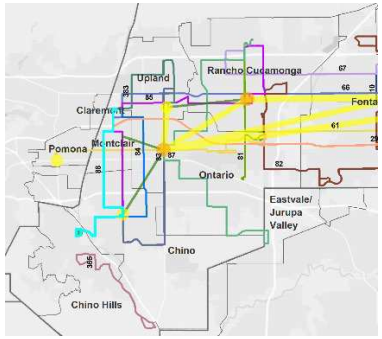
Route 81



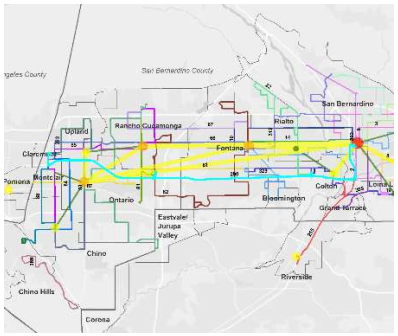
Route 84



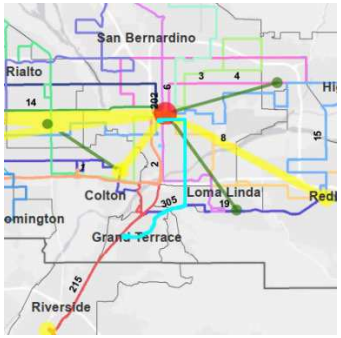
Route 88



Route 290



Route 305



Route 309/310

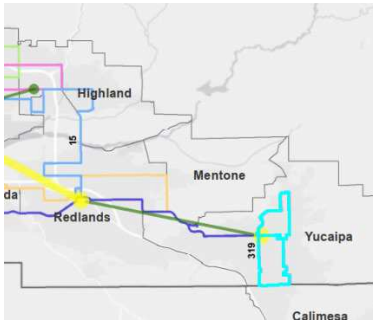
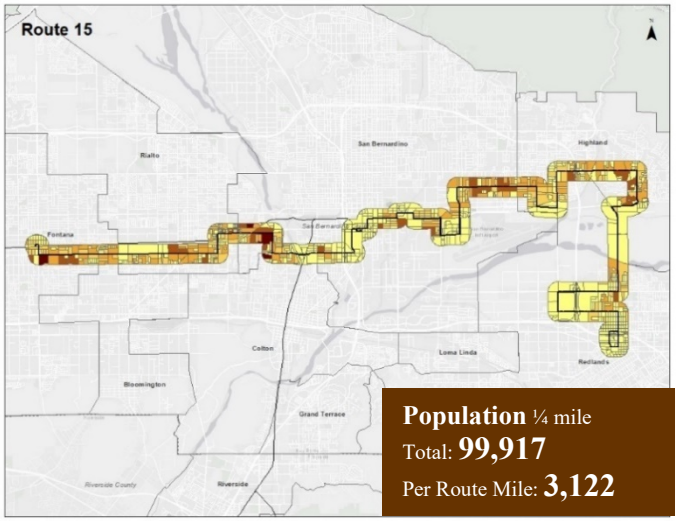
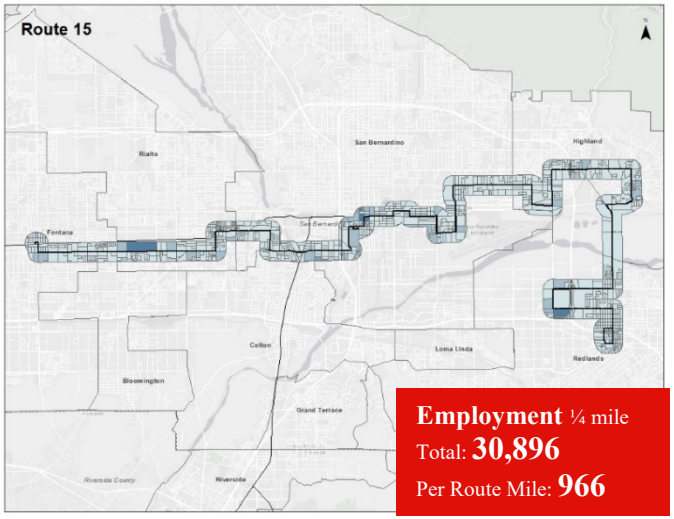
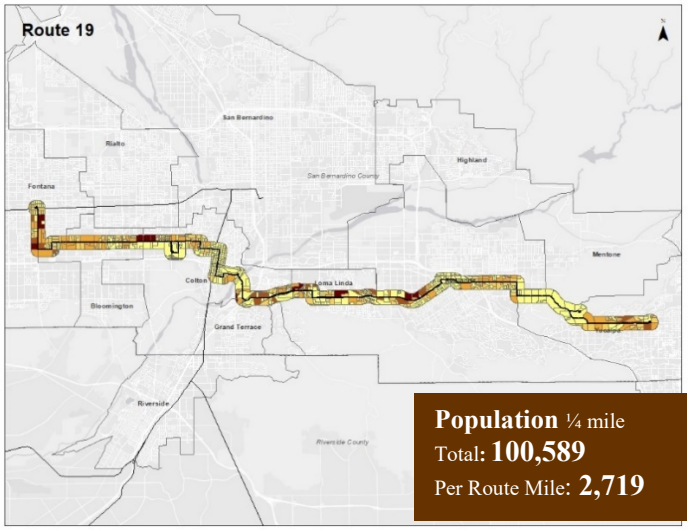
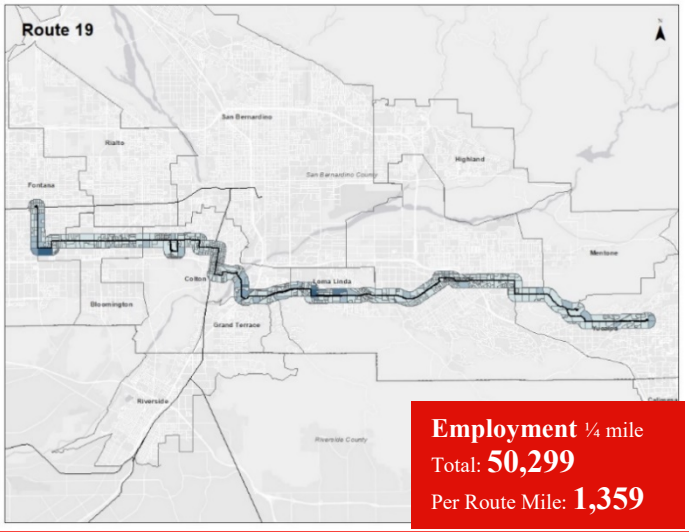
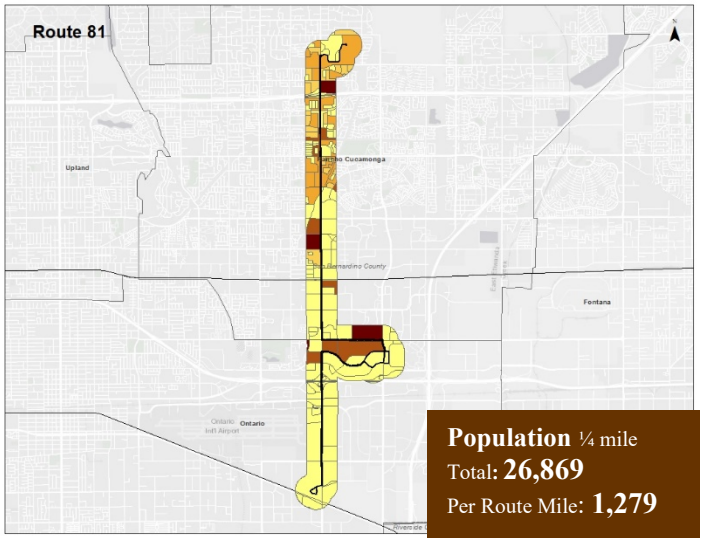
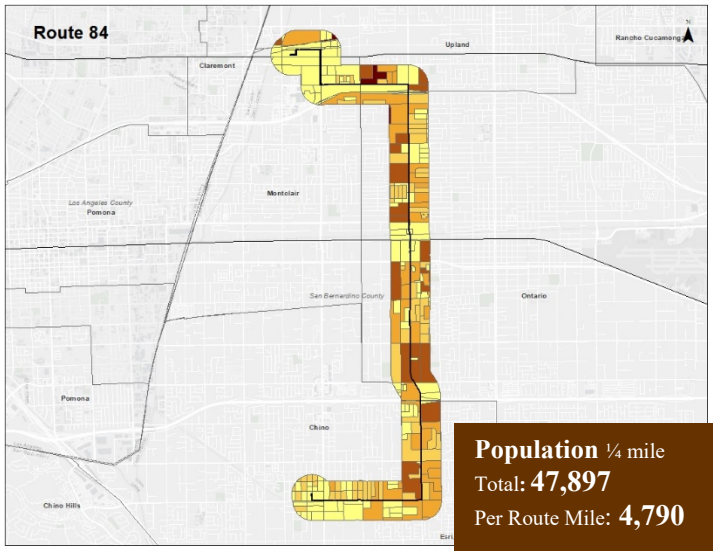
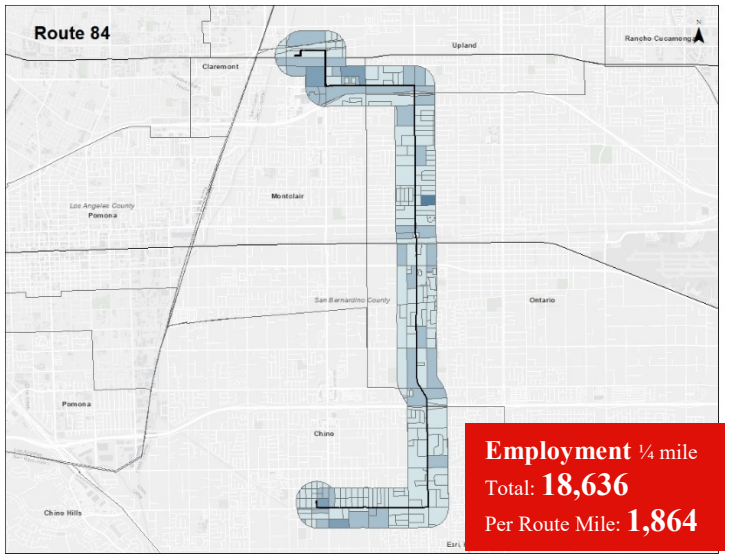
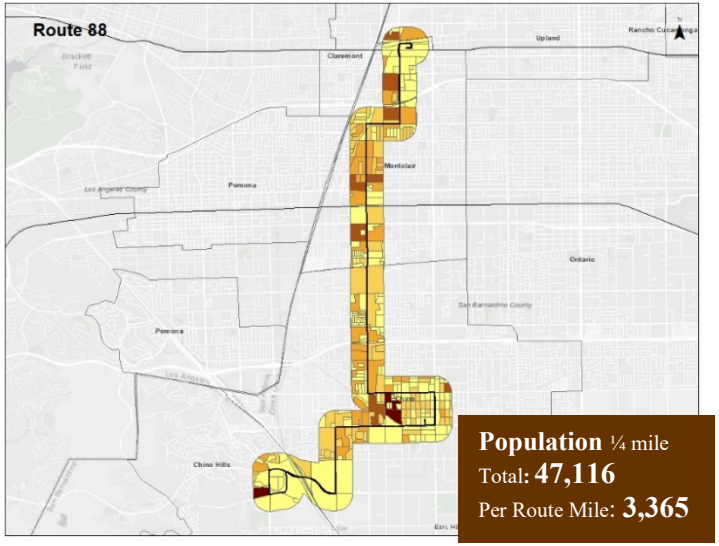
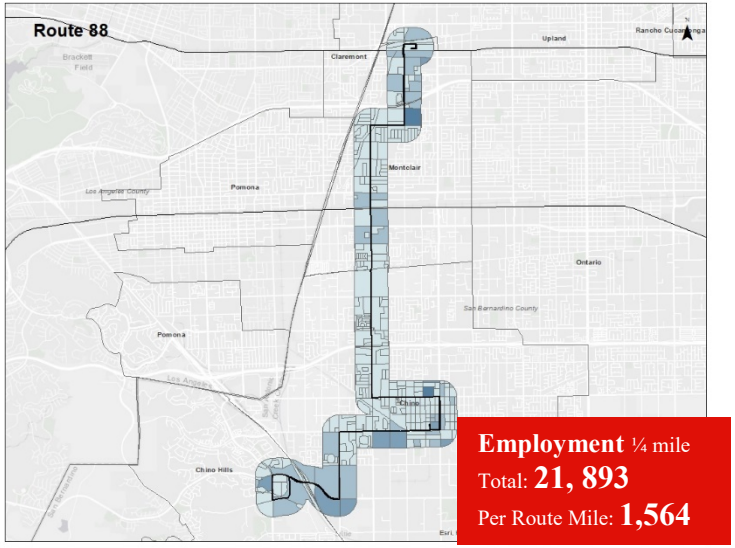
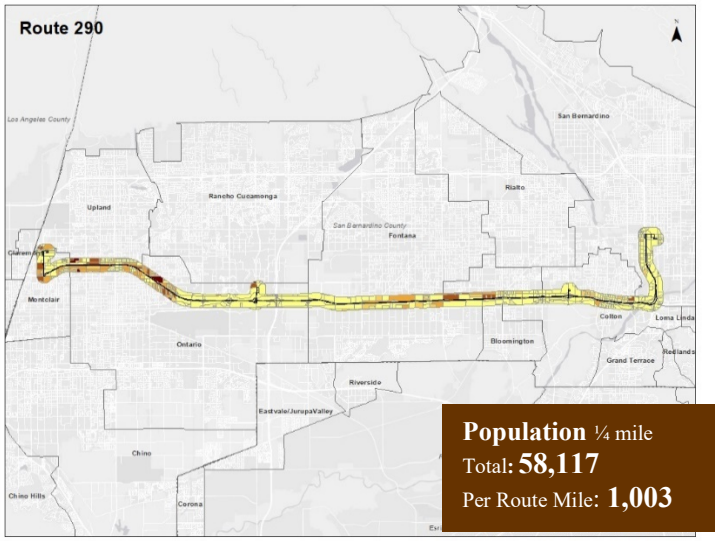
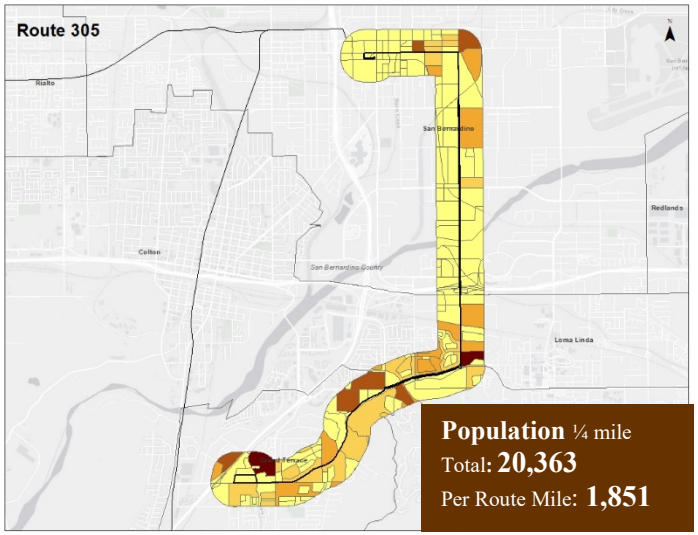
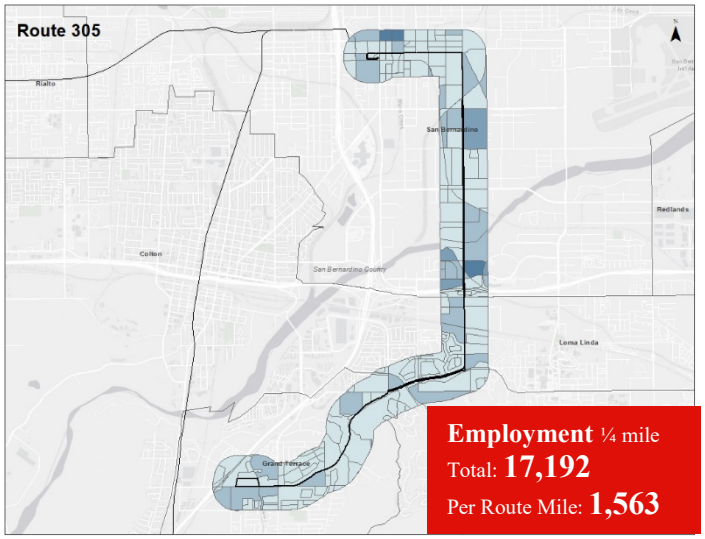
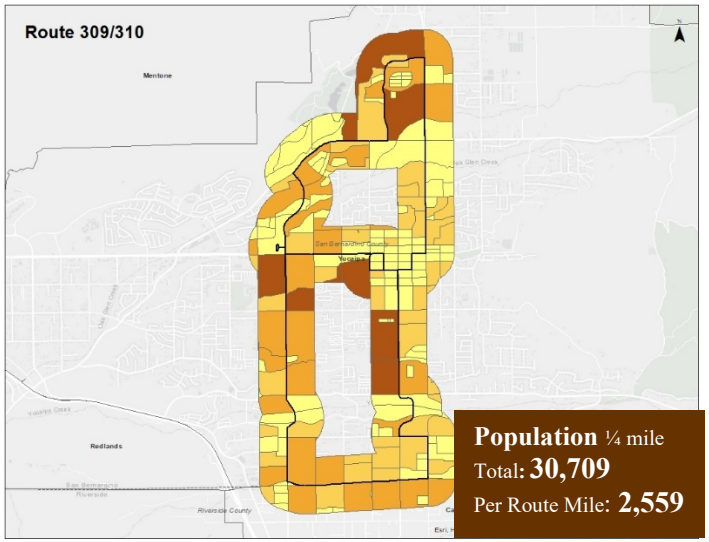
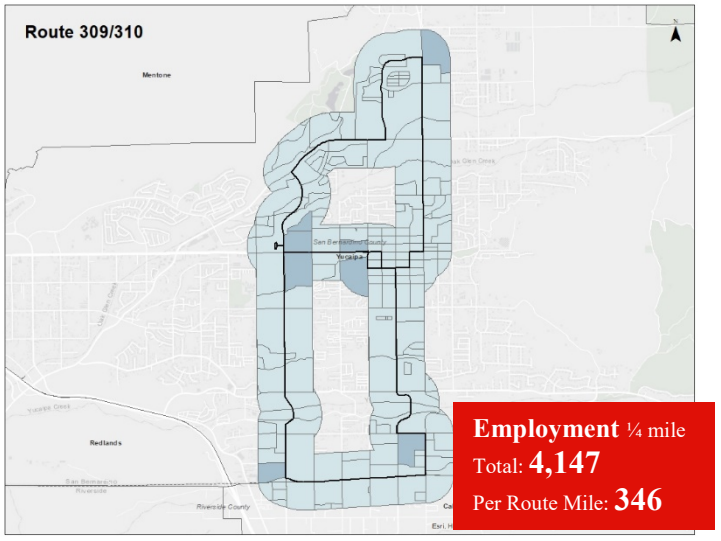


Figure 39: Candidates for Route Revisions - Population and Employment Density

ROUTE	POPULATION	EMPLOYMENT
Route 15		
Route 19		

ROUTE	POPULATION	EMPLOYMENT
Route 81		
Route 84		

ROUTE	POPULATION	EMPLOYMENT
Route 88	 **Population** ¼ mile Total: **47,116** Per Route Mile: **3,365**	 **Employment** ¼ mile Total: **21, 893** Per Route Mile: **1,564**
Route 290	 **Population** ¼ mile Total: **58,117** Per Route Mile: **1,003**	 **Employment** ¼ mile Total: **66,474** Per Route Mile: **1,146**

ROUTE	POPULATION	EMPLOYMENT
Route 305		
Route 309/310 (now served by Route 319)		

6 SERVICE CONCEPTS

6.1 OVERVIEW

Omnitrans has been moving in various directions designed to apply new and innovative types of service to its network. Prior to the pandemic, its *frequent network* consisted of six routes, including the sbX BRT line, with 15-minute or better frequency throughout the day. This is the frequency at which customers do not have to use a timetable to determine the next bus to plan their trip but can rely on the fact that a bus will be arriving soon, and the same level of service will be available later in the day. Current plans call for the restoration of these service levels in 2021.

Metro-Valley is also developing a *high capacity network*. The sbX BRT line, on which higher capacity, 60-foot articulated buses are operated, will be joined by a second BRT line, the West Valley Connector. The Metrolink commuter rail system operates three lines that serve the Metro-Valley, including the San Bernardino Line, which connects the East Valley and West Valley portions of the study area, with high capacity service that extends to Los Angeles County. Metrolink will be joined by the Arrow/Redlands line, extending commuter rail service east from San Bernardino to Redlands using innovative, fuel-cell powered equipment.

The Metro-Valley has an extensive *transit hub network*, with 12 off-street and on-street facilities and locations throughout that facilitate transferring from one bus route and/or rail line. Connections can be made to some of the other transit systems in San Bernardino County including VVTA, Mountain Transit and Foothill Transit as well as the systems serving adjacent counties. The extent of facilities serving passengers varies by location.

Omnitrans is also taking the first steps to develop a *new mobility network*, starting with its Chino Hills OmniRide service that provides TNC levels of convenience in an area that has been challenging for efficient fixed route operation. The use of mobile apps for reservations and fare payment is one example of the support technology being used as part of this on-demand service.

The concept recommendations in this Task 3 Report focuses on these four networks:

- Filling in gaps of the frequent network and enhancing service where unmet market potential is identified
- Better connections between local service and the high capacity network, including commuter rail
- Addition of new mobility hubs to the transit center network to maximize travel opportunities on transit and other modes covering first/last mile trips
- Expansion of the nascent microtransit network across the Metro-Valley to more efficiently serve lower density areas and major employment clusters

The extent to which these concepts are considered innovative may be debatable. The expansion of microtransit, while a relatively new concept in transit, now exists in the Metro-Valley, but new microtransit zones would not be considered groundbreaking. However, the concepts are designed to reimagine the structure of the transit system in the Metro-Valley.

The idea of transit *innovation* is often equated with *automation*. As described in Chapter 3, AV technology has not yet progressed to the point where it can be applied to real world transit. Incremental but steady progress is being made, and several pilot shuttle programs are underway but are still considered experimental and confined to campus-type environments such as colleges and office parks. AV technology is also now being applied to BRT in limited ways, starting in a busway environment completely separated from general traffic and pedestrians. Additional AV applications are being designed and promoted across the globe, but hurdles for real world application - which include safety, proprietary technology, and Buy America requirements – mean that their availability for the Metro-Valley is far from imminent. As a result, the concepts proposed in this report are designed to be implementable in the short-term, rather than long-term, but would be "future ready" to adapt to advancements as they become available and affordable.

Transit operating budgets are tight nationwide and in San Bernardino County. Depending on the type of improvement, the concept recommendations may be offset by their replacement of existing service and redirection of resources. Other services and facilities represent increased costs, but their extent herein is limited in order to minimize their budgetary impact. Estimated costs of the conceptual recommendations are included at the end of this section, along with a matrix that summarizes the issues for each and provides an implementation timeline.

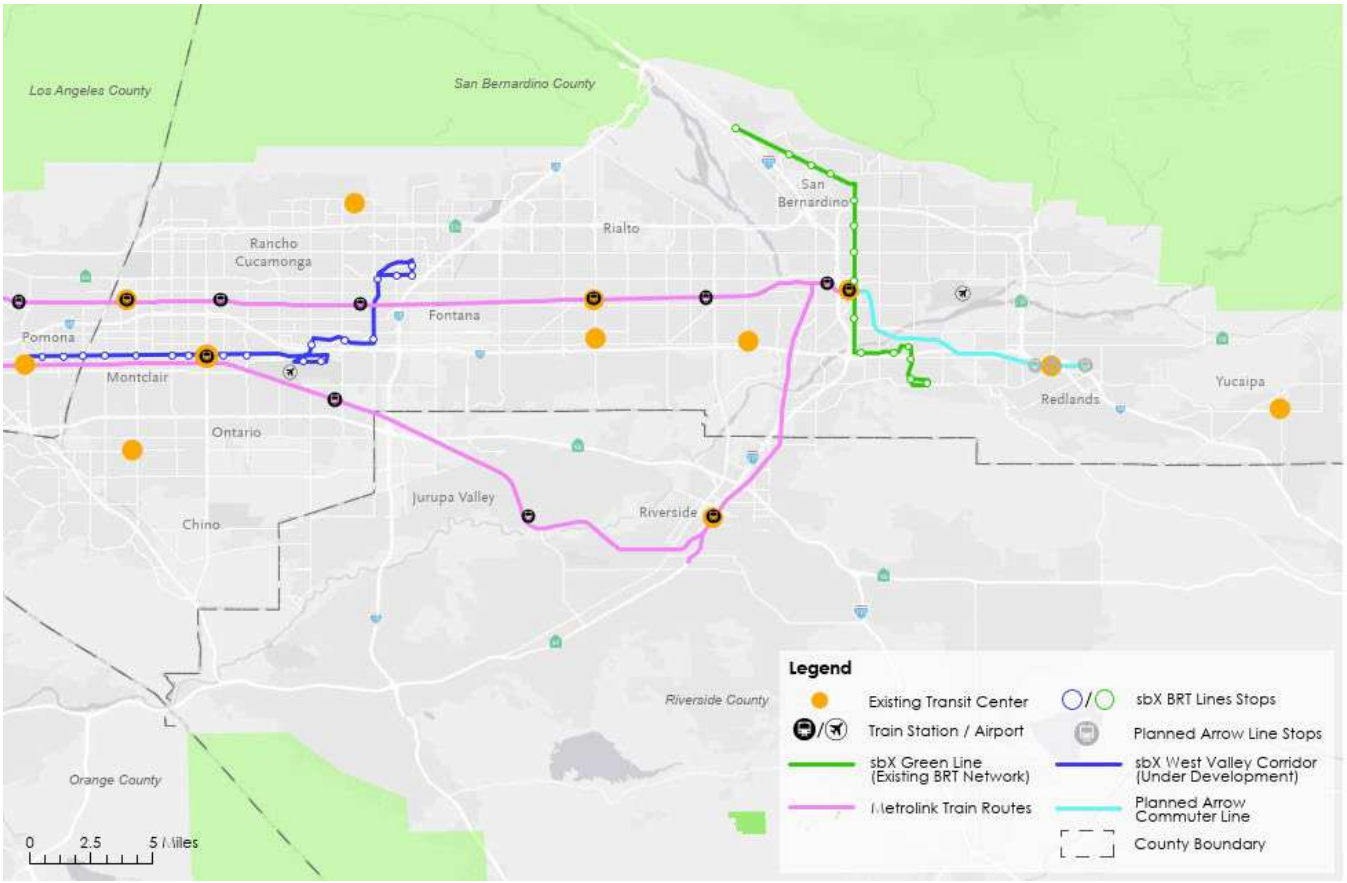
6.2 HIGH CAPACITY/FREQUENT SERVICE

The pre-pandemic frequent network consisted of seven routes that operate throughout the day on 15-minute intervals or less. The September 2020 service changes reduced service on many routes, and as a result, no routes offer 15-minute service, with frequency reduced to approximately thirty minutes.

Depending on how operational structures and ridership emerge from the pandemic, a primary goal would be the restoration of high-frequency service on these routes, and possibly expand the extent of the high-frequency network by adding trips to additional routes and a select array of new, limited-stop overlay routes.

One Omnitrans high frequency route, the sbX BRT line, comprises a part of the Metro-Valley's high capacity network The high capacity network includes the Metrolink commuter rail line and two upcoming additions: the West Valley Connector BRT line in the West Valley and the Arrow commuter rail line in the East Valley. The current and under-development high capacity network is shown in Figure 40.

Figure 40: Current/Near Future High Capacity Network



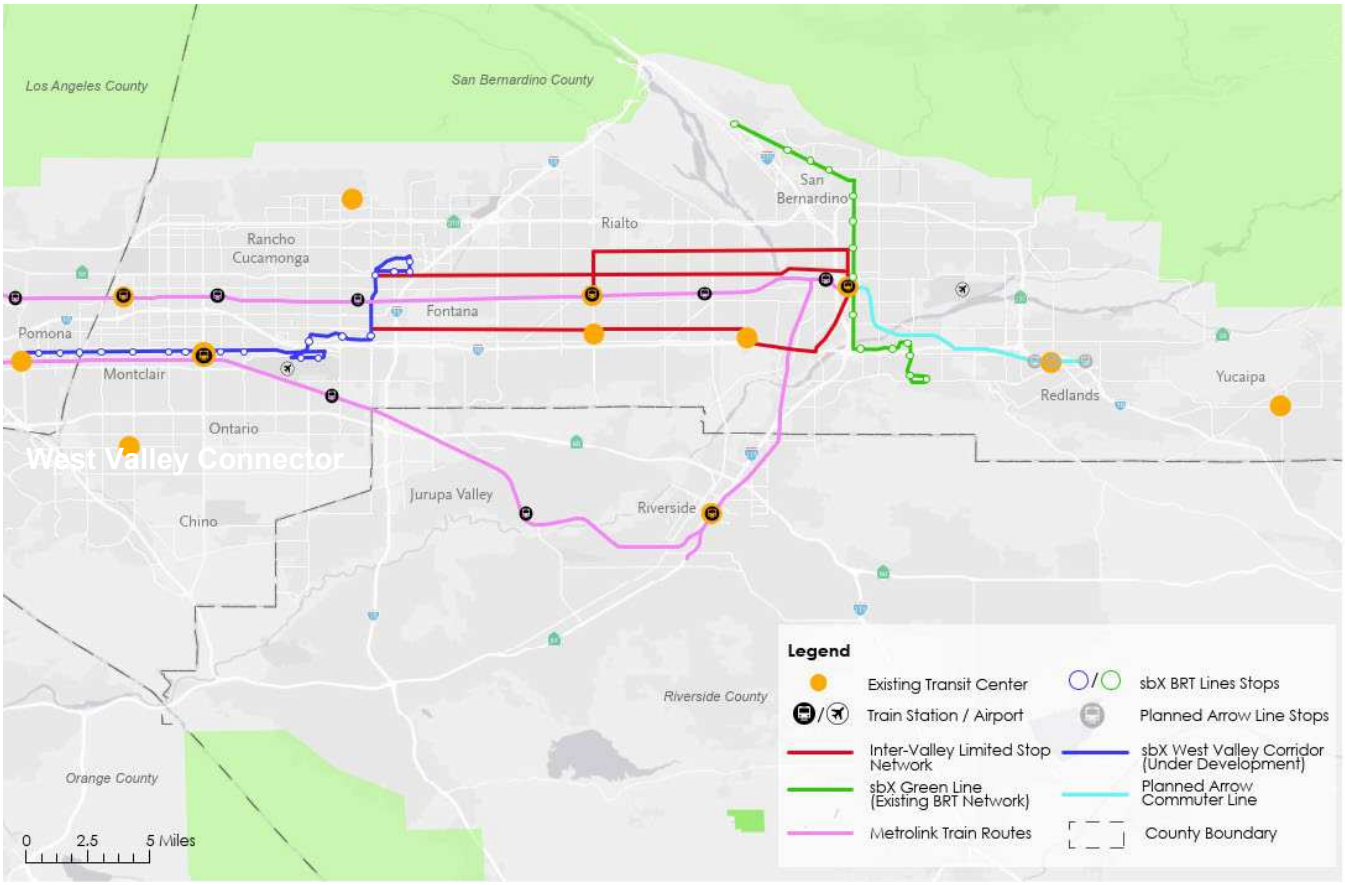
6.2.1 INTER-VALLEY LIMITED STOP NETWORK

Rather than focusing on adding new routes to Omnitrans' existing, six-route frequent network, the addition of select limited-stop routes in key corridors would address transit travel time by providing a faster alternative to slower, all-stops service. Exclusive bus lanes also assist infrequent service routes in ensuring on-time scheduling.

For instance, Route 290, which provides highly limited-stop service between the East Valley and West Valley, still requires a transfer along Sierra Avenue in Fontana. Operationally, there are reasons not to provide one-seat rides on routes that are 15-20 miles in length. If a bus encounters a delay, the effects are compounded over a considerable amount of territory and less easily fixed than on a shorter route. In addition, on local routes with slow speeds, a 15-20-mile trip at current average speeds would result in a very time-consuming trip from end to end.

However, the market analysis indicates that there is potential to gain ridership along corridors that connect the East Valley and West Valley. Three Inter-Valley limited-stop routes (Figure 41), with an initial headway of 30 minutes and service on weekdays, are recommended. Stop spacing would be approximately every mile, with the focus on existing high ridership location, major activity, and employment centers, combined with transfer points to intersecting routes. Two proposed corridors would link directly to the WVC BRT line, which will only serve areas of Ontario and Rancho Cucamonga and toward the west in cities like Montclair and Pomona. The third will connect with the sbX line. By providing a convenient connection to the mobility hubs suggested above, the utility of the WVC will increase by providing a convenient connection to Fontana, San Bernardino, and Colton.

Figure 41: Inter-Valley Limited Stop Network



By having limited locations, the average speed of the service is estimated to be up to 20 percent faster than local service. It is recommended that conventional equipment and currently available technology be utilized to serve the Inter-Valley routes. Transit signal priority and queue jumps would be needed to increase operating speed, but also to help to maintain on-time performance and critical schedule reliability.

SAN BERNARDINO – RANCHO CUCAMONGA VIA FOOTHILL BOULEVARD

This corridor was proposed for BRT in the LRTP. This alternative limited stop route would operate along Foothill Boulevard (Historic Route 66) between the San Bernardino Transit Center (SBTC) and a proposed new mobility hub at Foothill and Milliken Avenue (see Section 6.3) where it would intersect the WVC. It covers portions of the Foothill West and Foothill East in Omnitrans' Systemwide BRT Plan. This high frequency route will overlay existing local Routes 14 and 66. Buses can operate along the sbX dedicated lanes but run closed door along this segment until reaching the SBTC, as right-side-only doors are incompatible with station layouts. Schedule conflicts should not be an issue, and buses can bypass BRT buses by merging into the general traffic lanes, which are separated only by painted lines. Usage of the lanes will help maximize their utility and provide a more reliable trip along the E Street segment.

The westward expansion of this route should be considered in future planning efforts. While the market analysis does not point to considerable travel patterns between Rancho Cucamonga and Montclair at this time, an incremental expansion could extend first to San Antonio Hospital and eventually to the Montclair Transit Center.

SAN BERNARDINO – ONTARIO VIA SAN BERNARDINO AVENUE

This corridor was proposed for BRT in the LRTP. This alternative limited stop route would parallel the Foothill Boulevard Inter-Valley route and terminate at the new mobility hub at Ontario Mills, also conjoined to the WVC. It would cover portions of the San Bernardino Avenue Corridor and the Holt Boulevard/4th Street Corridor in Omnitrans' Systemwide BRT Plan. From west to east, the route would serve the Fontana South Transit Center and continue east on San Bernardino Avenue with a stop at Arrowhead Regional Medical Center. At this point, the route would continue along West Valley Boulevard and a short segment of N. 10th Street before taking Colton Avenue/Inland Center Drive to E Street in San Bernardino, terminating at the SBTC. Also, the easternmost portion of this alignment responds to the market potential identified for Colton-San Bernardino trips alongside local trips within Colton.

FONTANA-SAN BERNARDINO VIA SIERRA AVENUE/BASELINE ROAD

A portion of this corridor (Sierra Avenue) was proposed for BRT in the LRTP. This route would provide east-west service along Baseline Avenue but turn southward to serve the Fontana Metrolink Transit Center. It would serve a portion of the Sierra Avenue Corridor in Omnitrans' Systemwide BRT Plan; however, Baseline Road is not among the plan's recommended BRT corridors. This route would not only provide a faster option for customers in the Baseline corridor and those traveling between San Bernardino and Fontana but would enhance access to jobs from the Fontana Metrolink Transit Center to the cluster of jobs in Rialto, which features various Amazon facilities. As the Foothill Boulevard Inter-Valley route, the sbX dedicated lanes can be used with no interference with BRT service to provide a non-stop, reliable travel along E Street.

6.2.2 EXPANDED HIGH-FREQUENCY LOCAL NETWORK

Under pre-pandemic conditions, the performance of various routes suggests that the following routes would be excellent candidates for inclusion in the high-frequency network following resumption of high frequency service on the original pre-pandemic network:

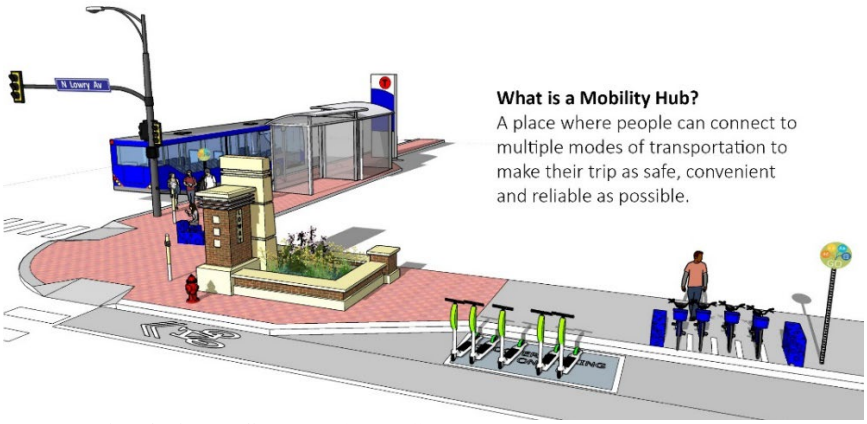
- **Route 215, San Bernardino – Riverside**: this regional connector route, which operates along and next to I-215 and connects the downtown transit centers of San Bernardino and Riverside, maintains its 20-minute peak headways in the September 2020 service change. As the most productive route among the routes that operate between 20 and 30 minutes, the potential exists to boost its frequency to 15 minutes.
- **Route 8, San Bernardino – Mentone – Crafton Hills College**: this East Valley route is now a 60-minute service; restoration of 30-minute service should be a goal. Depending on the eventual ridership response, a 15-minute service can be considered in the future.

6.3 MOBILITY HUBS

The existing network of twelve transit centers is extensive and well distributed across the Valley service area. However, additional connection points could support new mobility hubs that not only serve as convenient, comfortable, and safe transfer points between routes, but also provide an array of micromobility services (please refer to Section 6.6) to expand coverage and facilitate first/last-mile connections. These new nodes can also serve as gateways to potential microtransit services (refer to Section 6.4).

Examples of mobility hubs include an on-street concept in Minneapolis, illustrated in Figure 42, and an off-street concept in Kansas City, which includes a BRT station, shown in Figure 43.

Figure 42: On-Street Mobility Hub Concept, Minneapolis



Source: City of Minneapolis, www.minneapolismn.gov

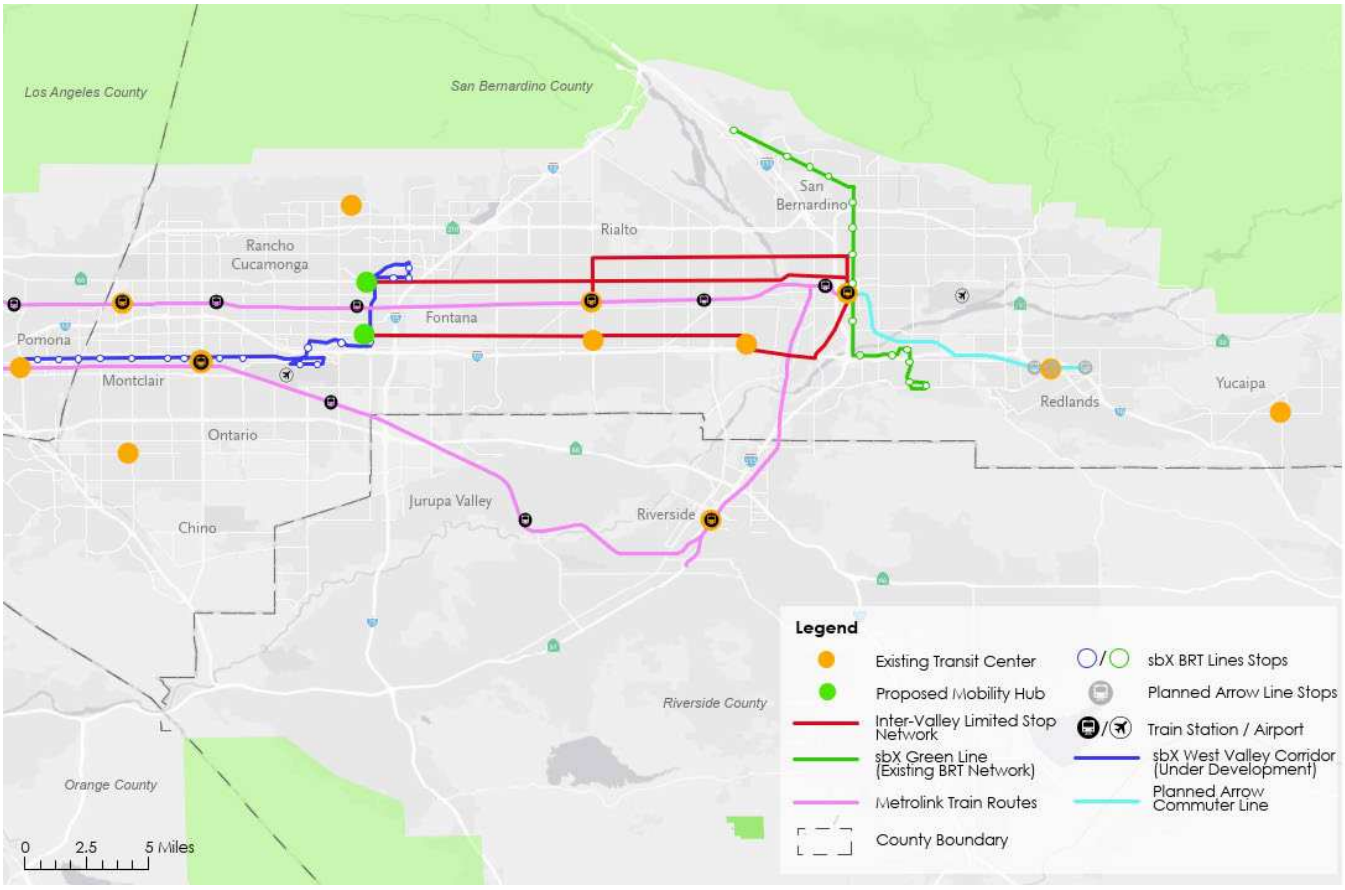
Figure 43: Off-Street Mobility Hub Concept, Kansas City

Source: UMKC WordPress

Two mobility hub locations, shown in Figure 44, are recommended, both of which would be located along the WVC, currently in the development stage, and also serve as a BRT station. As a result, they will broaden the utility of the WVC. The southern hub will be located at Ontario Mills Mall in the City of Ontario and could serve as a hub for alternative forms of transit, such as micromobility, alongside BRT service. The northern hub will be located alongside Historic Route 66, Foothill Boulevard and Milliken Avenue, a major arterial of which the first stage of the WVC is commonly referred to as "the Milliken alignment." Also featured at the intersection lies a piece of Rancho Cucamonga "open space", which could serve as a possible recreation area for the future mobility node. Further discussion of these future sites continues below.

In addition to providing bus stop and passenger waiting facilities, the mobility hubs can include provisions for real-time information, battery electric bus quick-charging stations, micromobility services (bike-share, scooter-share, and carshare), and facilities for drivers and supervisors. Working with the host cities and local stakeholders, the hubs can also be conceived in conjunction with adjacent development to promote pedestrian linkages to and from activity and employment centers. This would further enhance the utility of the mobility hubs and generate additional ridership.

Figure 44: High Capacity Network with Suggested New Mobility Hubs (Ontario and Rancho Cucamonga)



ONTARIO MILLS MALL MOBILITY HUB: ONTARIO

A mobility hub at or in the vicinity of Ontario Mills Mall will be developed in conjunction with a WVC BRT station. It will serve Ontario Mills, a major anchor destination in the West Valley, and have proximity to Ontario International Airport and Toyota Arena at the west of Milliken Avenue. It would also be a transfer point with Routes 61, 81, 290 along with WVC. In addition, a mobility hub at Ontario Mills will provide a transfer point to additional services suggested in this chapter, described below, including an Inter-Valley limited-stop route on San Bernardino Avenue to Colton and San Bernardino and a Hub-to-Jobs microtransit service covering the vast industrial zone located to the north, east and south.

A specific site has not been determined as part of this study; an analysis of available locations that would provide convenient access while avoiding or minimizing route realignments and their potential additional operating cost would be required. An off-street site is preferred to allow for a substantial covered passenger waiting areas and other amenities such as seating, landscaping, and a comfort facility for drivers; however, as demonstrated by the example provided (Minneapolis), an on-street hub would be sufficient. Plans for this line call for side-running stations located opposite each other close to the mall entrance. If space is available, the linear footage of the station could be expanded to accommodate the additional functions of a mobility hub.

FOOTHILL – MILLIKEN MOBILITY HUB: RANCHO CUCAMONGA

A mobility hub located in the vicinity of Foothill Boulevard and Milliken Avenue, about 2.3 miles north of Ontario Mills, will also be developed in conjunction with a WVC BRT station. It will serve as a transfer point with Routes 66, 82, and 85. In addition, a mobility hub at this location would provide a transfer point to additional services suggested in this chapter, described below, including an Inter-Valley limited-stop route on Foothill Boulevard to Fontana and San Bernardino, and a potential microtransit service serving the area between the hub and Chaffey College.

As with the Ontario hub, a specific site has not been determined as part of this study; an analysis of available locations that would provide convenient access while avoiding or minimizing route realignments and their potential additional operating cost would be required. An off-street site is preferred to allow for a substantial covered passenger waiting areas and other amenities such as seating, landscaping, and a comfort facility for drivers. It would be preferable that the WVC station be integrated with the mobility hub. If an off-street hub site is achievable, an adjacent on-street BRT station would still provide a convenient transfer connection for passengers.

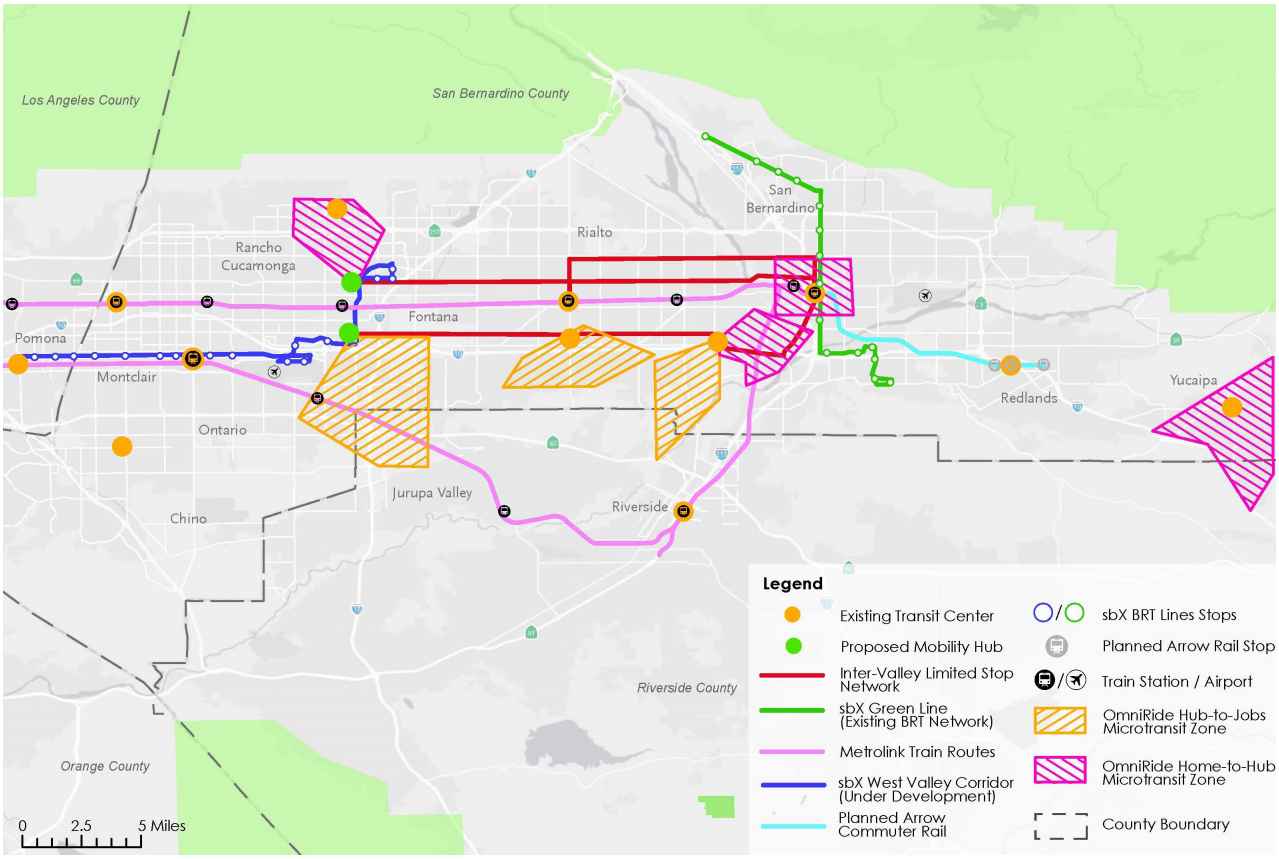
6.4 MICROTRANSIT

The implementation of the Chino Hills OmniRide in September 2020 is the Metro-Valley's first microtransit service. Additional opportunities exist to replace underperforming or slow fixed-route service with microtransit service. Two variations are suggested: residential-focused OmniRide "Home-to-Hub" service and employment-focused OmniRide "Hub-to-Jobs" service. Both would be operated in a similar fashion to the Chino Hills OmniRide, although there is an array of operational and contractual options, as described in Chapter 4. The primary difference between the two is the opportunity to operate the Hub-to-Jobs microtransit during the late-night and overnight hours to serve all work shifts at distribution centers and other employers.

Conventional equipment and infrastructure would be used to provide new microtransit service. However, as AV technology is refined to the point where operational and safety issues are resolved and operating costs fall below current costs per hour, the suggested microtransit service candidates would be ripe for future AV applications.

The microtransit zones, combined with the expanded high capacity network, are shown in Figure 45. Each zone is described on the following pages, along with a map of the zone and statistics describing population, employment and density. These include a transit propensity "score" (using the same methodology used for in the Market Analysis in Chapter 5). The transit propensity score is calculated using CTPP survey data. The existing transit propensity score is based on the number of existing transit trips, out of the number of maximum transit trips, between any origin-destination census tract pair. The potential transit propensity score is based on the number of potential transit trips, out of the number of maximum transit trips, between any origin-destination census tract pair.

Figure 45: Proposed High Capacity Network, Mobility Hubs and Microtransit Zones



6.4.1 OMNIRIDE HOME-TO-HUB MICROTRANSIT

Four OmniRide Home-to-Hub microtransit services are suggested: Yucaipa, Colton, North Rancho Cucamonga, and San Bernardino Core.

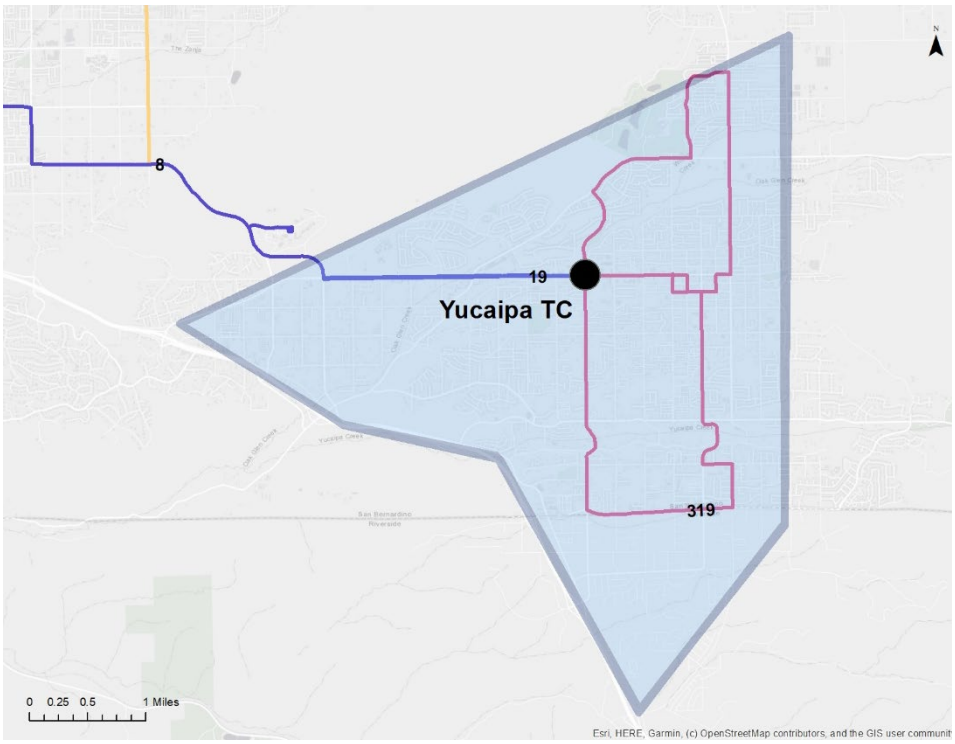
YUCAIPA

Omnitrans has already reduced service in the Yucaipa area by eliminating OmniGo Routes 308, 309, and 310 and replacing them with a single service, OmniGo Route 319, effective September 2020. The Yucaipa OmniGo routes were the lowest-performing services in the system.

It is important to let residents in the area acclimate to the new service and give the service enough time to generate ridership. However, conditions for conversion to microtransit are similar to those in Chino Hills: a location on the edge of the service area, relatively low development density, and connection to the fixed route system at the nearby transit center. As in Chino Hills, the area served by Yucaipa OmniRide Home-to-Hub service can greatly enlarge the area served by transit. By creating microtransit zones surrounding connection hubs, Home-to-Hub becomes even more accessible.

The zone is illustrated, and its characteristics are described, in Figure 46. The zone has a population of 49,410 and 7,453 jobs in a 14.2 sq. mi. area.

Figure 46: Yucaipa Microtransit Zone



	Internal Trip Propensity
Population Density: 5.5 People per Acre	**Existing Transit: 17** (100/591)
Employment Density: 0.8 Jobs per Acre	**Potential Transit: 22** (940/4,317)

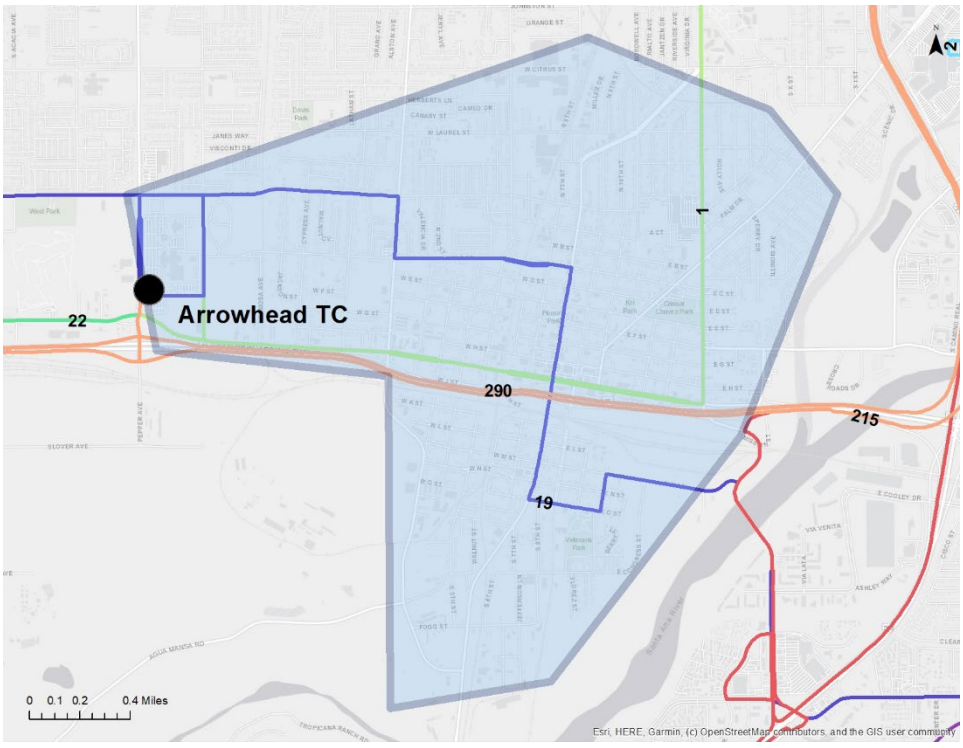
COLTON

Colton is served by the popular Routes 1 and 19. This market analysis identified significant potential for transit trip-making that begins and ends within Colton. In addition, the southernmost part of Colton is somewhat isolated, bounded by the cement plant and the Santa Ana River. A microtransit service in Colton would also allow for the streamlining of Route 19, which currently features several turning movements, indirect travel, and relatively slow travel times. These improvements will collectively help improve overall travel time and convenience.

A suggested Colton OmniRide Home-to-Hub microtransit zone would include the Arrowhead Regional Medical Center Transfer Center, where connections can be made to Routes 1, 19, and 22. New mobility opportunities may emerge with microtransit serving a vital role in connecting patients and workers to this major medical and employment center.

Figure 47 illustrates the general location of the zone and some of its characteristics. The zone has a population of 24,735 and 6,376 jobs in an area of 4.2 square miles.

Figure 47: Colton Microtransit Zone



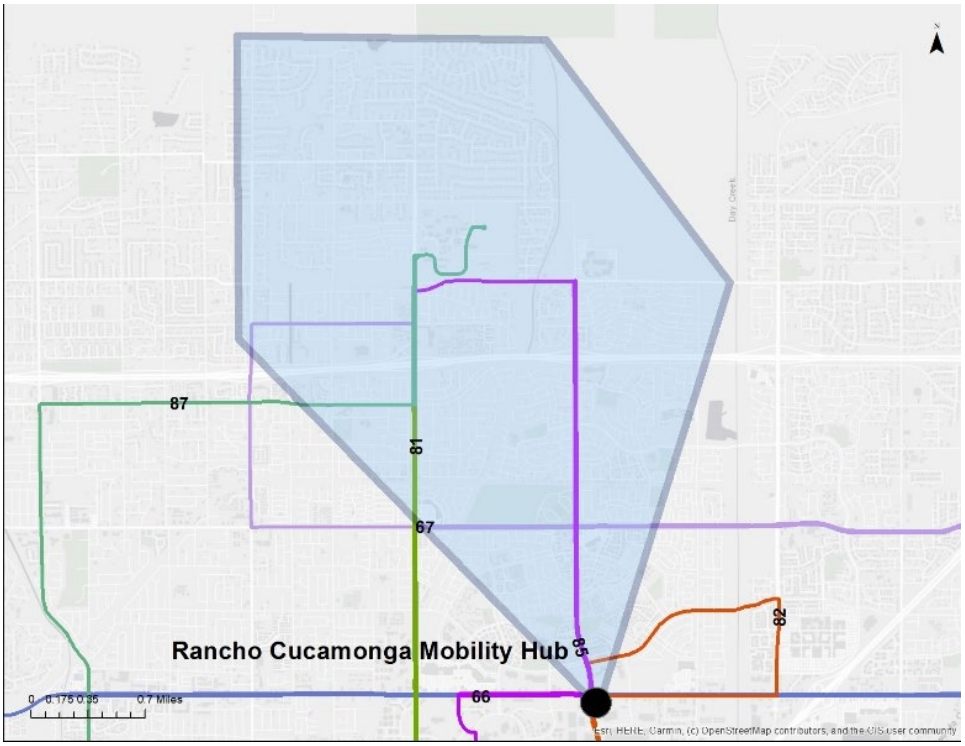
	Internal Trip Propensity
Population Density: 9.2 People per Acre	**Existing Transit: 6** (35/591)
Employment Density: 2.4 Jobs per Acre	**Potential Transit: 7** (302/4,317)

NORTH RANCHO CUCAMONGA

Four routes: 67, 81, 85, and 87, operate in the northern part of Rancho Cucamonga, all terminating at the Chaffey College Transit Center, located on the northern edge of the service area. Chaffey College subsidizes bus fares for students, providing Omnitrans with a substantial and stable funding source that must not be risked. However, additional analysis may be conducted to determine if any of the routes can be shortened to save resources and possibly terminate at the proposed mobility hub along the WVC BRT line at Foothills and Milliken. A microtransit service in this area specifically for college students could also be operated on weekends and nights only to test its performance prior to implementation on weekdays.

Figure 46 illustrates the general location of the zone. It has population of 50,072 and 6,804 jobs in an area of 8.1 sq. mi.

Figure 48: North Rancho Cucamonga Microtransit Zone



	Internal Trip Propensity
Population Density: 9.7 People per Acre	**Existing Transit: 5** (30/591)
Employment Density: 1.3 Jobs per Acre	**Potential Transit: 9** (370/4,317)

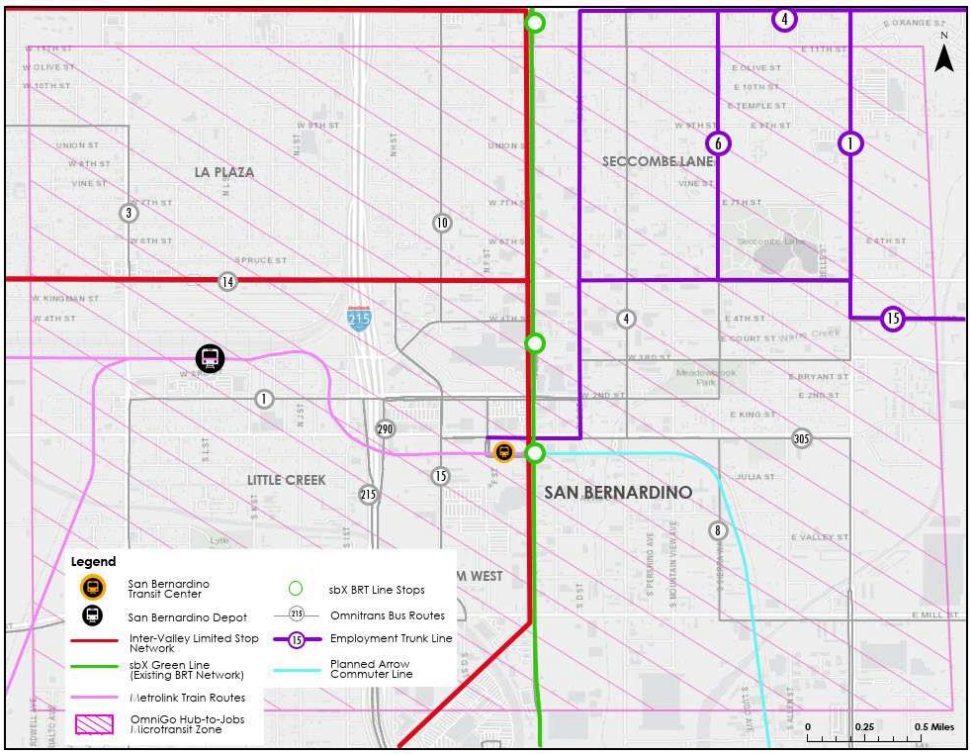
SAN BERNARDINO CORE

Identified as the top-rated potential transit market, internal trips within the City of San Bernardino are currently served by a dense, radial array of routes that converge at the SBTC. The potential exists to streamline the various routes to optimize the fastest approach to and from the SBTC, thereby reducing overall travel time for riders, many of whom are traveling to downtown San Bernardino solely to make a transfer and not necessarily as a destination.

A potential San Bernardino Core OmniRide Home-to-Hub microtransit zone is outlined Figure 49. It has a population of 23,839 and 17,088 jobs in an area of 3.2 sq. mi. The size of the core can vary, but it should be large enough to transport residents and those accessing local destinations efficiently, within 15-20 minutes maximum travel time to the SBTC.

There are additional options to connect the SBTC more effectively to the employment and activity nodes that are too far, inconvenient, or not safe to walk to. As described in the latter portion of this chapter, the existing route structure east of E Street could be consolidated to provide a high-frequency connection between the SBTC and the major employment sites at the city and county employment centers. An alignment consolidation would use existing resources and not require additional funding.

Figure 49: Potential San Bernardino Core Microtransit Zone



	Internal Trip Propensity
Population Density: 11.7 People per Acre	**Existing Transit: 2** (10/591)
Employment Density: 8.4 Jobs per Acre	**Potential Transit: 12** (539/4,317)

This microtransit concept is different and is more designed for residents rather than workers or others conducting affairs downtown. It also presents the opportunity to consolidate and improve travel times on key routes by realigning Route 10 and potentially the western portion of Routes 3 and 4 away from streets in residential areas and operate non-stop along the dedicated bus lanes on E Street used by the sbX BRT line. Because there are no barriers between the transit lanes and general traffic lanes, if a local bus encounters an sbX bus at a station, it can easily shift out of and back into the dedicated lane. As a result, there would be no interference with sbX BRT service. Because any local routes that would use the lanes would operate non-stop, no schedule conflicts would

arise as well. This concept would enhance the investment in the sbX infrastructure and maximize its utility and regional connectivity.

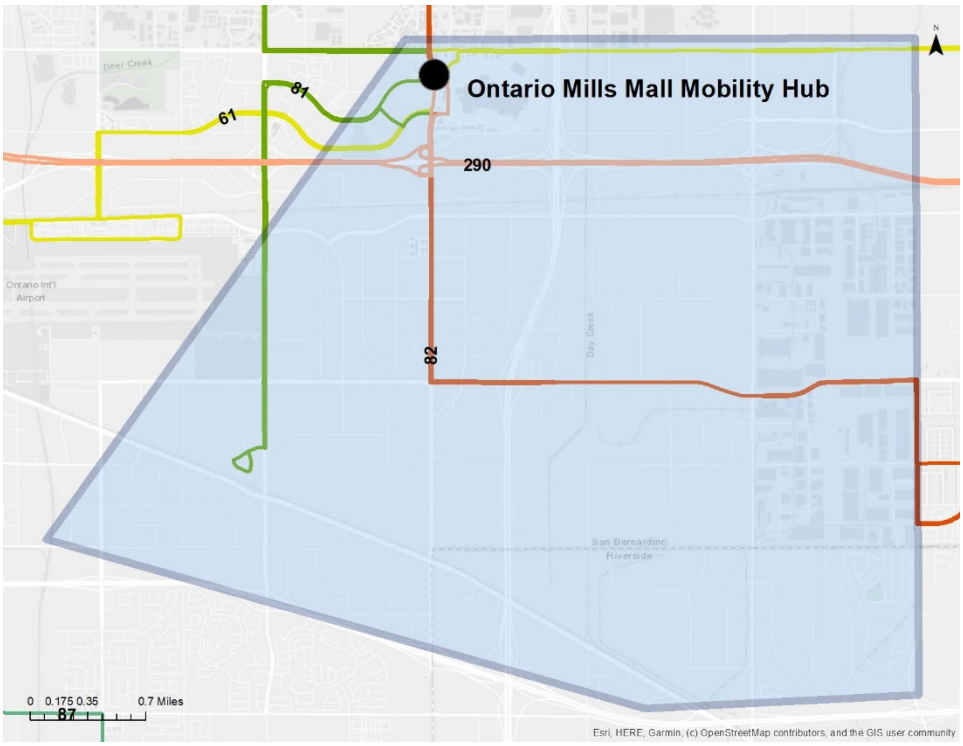
6.4.2 OMNIRIDE HUB-TO-JOBS MICROTRANSIT

Three Hub-to-Jobs microtransit services are suggested: Ontario, Fontana, and Bloomington-Colton.

ONTARIO

Identified as a top-five potential transit market, internal trips within Ontario are more heavily oriented to employment than in other parts of the study area. As indicated in Figure 50, the Ontario area features the county's largest employment site agglomeration, largely due to massive warehouse districts along the commercial corridors. The 16.2 sq. mi. zone has a population of 9,782 people and 54,254 jobs. Connections would be made to fixed routes at the proposed Ontario Mills mobility hub. A large area would be covered; given its extent, two vehicles may be required to cover it adequately. Otherwise, to keep the service to one vehicle, the area may need to be significantly reduced in size.

Figure 50: Ontario Microtransit Zone

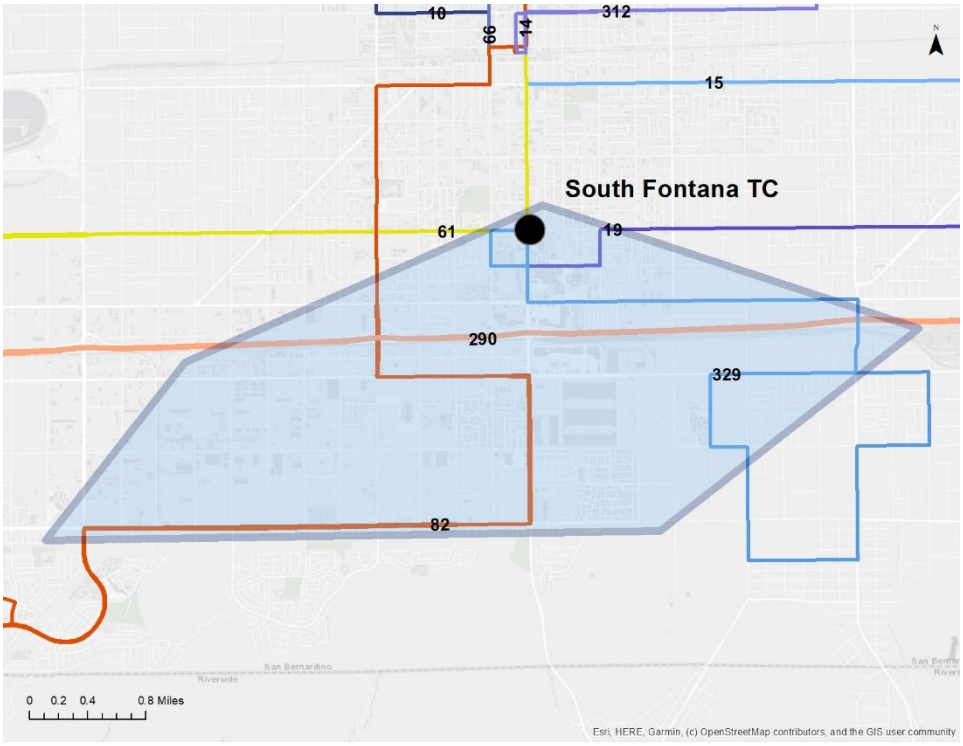


	Internal Trip Propensity
Population Density: 0.9 People per Acre	**Existing Transit: 21** (125/591)
Employment Density: 5.2 Jobs per Acre	**Potential Transit: 22** (950/4,317)

FONTANA

Identified as a top-five potential transit market, internal trips within Fontana cover a large geographic area. Although not as massive as the industrial zone in the Ontario area to the west, the industrial zone mainly located south of I-10 remains a significant employment concentration, but one that is challenging to serve via fixed routes. This microtransit solution would connect with the fixed-route network at the Fontana South Transfer Center. Combined with the potential microtransit zone in Ontario, the potential exists to remove Route 82 service south of I-10, thereby saving operating resources. The 8.3 sq. mi. zone is shown in Figure 51. It has a population of 36,892 and 18,650 jobs.

Figure 51: Fontana Microtransit Zone



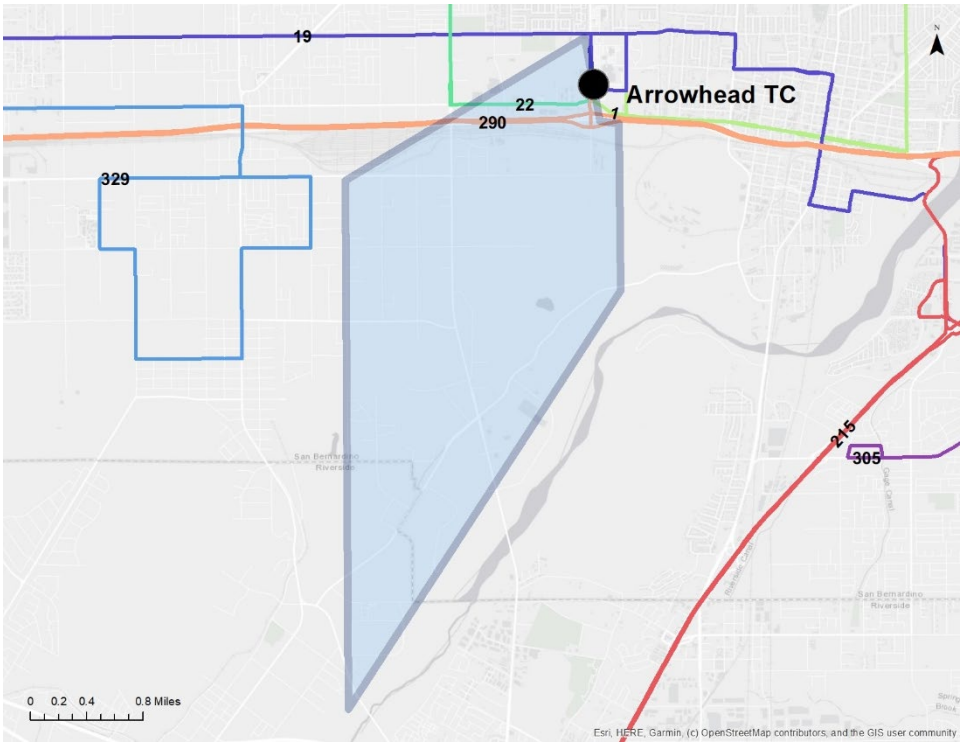
	Internal Trip Propensity
Population Density: 7.0 People per Acre	**Existing Transit: 3** (19/591)
Employment Density: 3.5 Jobs per Acre	**Potential Transit: 13** (571/4,317)

BLOOMINGTON-COLTON

Another sizeable employment area south of I-10 is the large freight corridor to the east between Bloomington and Colton. It is currently underserved but may have the potential to generate ridership with a micro-transit service that can more easily navigate the complex and partly isolated district. A suggested Fontana OmniRide Hub-to-Jobs micro-transit zone would connect with the fixed-route network at the Arrowhead Medical Center Transfer Center. The district is largely suburban and light-industrial in use, combined with residential. Other potential connection points include downtown Colton government offices, Crestmore, and the Agua Mansa industrial corridor, which houses multinational corporation distribution centers.

The Bloomington-Colton zone is shown in Figure 52. Within an area of 5.5 sq. mi., the population of the zone is 2,348 people with 4,262 jobs.

Figure 52: Bloomington-Colton Microtransit Zone



	Internal Trip Propensity
Population Density: 0.7 People per Acre	**Existing Transit: 3** (20/591)
Employment Density: 1.2 Jobs per Acre	**Potential Transit: 2** (93/4,317)

6.5 DOWNTOWN SAN BERNARDINO

Figure 53 illustrates the distribution of employment density in downtown San Bernardino. The primary employment clusters are centered around city and county office complexes generally located east of E Street. The issue at hand is the distance between the SBTC and these employment and activity concentrations involve a walk of over ten minutes, which can be inaccessible, inconvenient, and unpleasant when the weather is hot or inclement. While downtown contains a consistent grid of streets and adjacent sidewalks, perception issues may also be a factor. Therefore, the potential for alternative services is addressed.

The number of jobs that can be accessed in five, ten, and 15 minutes during the morning peak period are shown in Table 14. The number of jobs that can be accessed varies based on the schedule of service for routes operating in and out of the SBTC at any given time. The number of jobs that can be accessed within five minutes of the SBTC is relatively small; however, the numbers are much larger within the 15-minute travel threshold, one that is inconvenient or impractical for many.

Figure 53: Downtown San Bernardino Employment Density

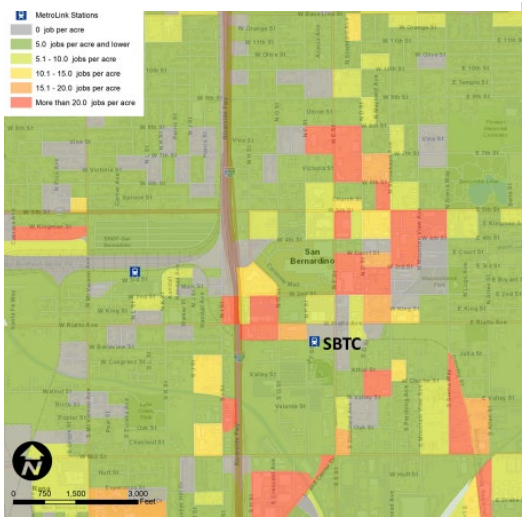


Table 14: Number of Jobs in Downtown San Bernardino Census Blocks by Travel Time (AM Peak)

TIME PERIOD	5 MIN TRAVEL TIME	10 MIN TRAVEL TIME	15 MIN TRAVEL TIME
7:00 AM	2,059	8,288	23,304
7:15 AM	3,476	15,917	31,176
7:30 AM	2,071	9,844	27,806
7:45 AM	2,068	16,717	40,188
8:00 AM	2,068	10,356	29,277
8:15 AM	2,222	9,806	35,476
8:30 AM	2,068	16,535	28,563
8:45 AM	3,870	9,905	38,328
9:00 AM	2,068	10,085	20,972
9:15 AM	3,467	16,432	37,308
9:30 AM	2,059	15,846	21,845
9:45 AM	5,278	16,117	30,813
10:00 AM	2,059	8,053	15,819

6.5.1 IS A SHUTTLE PRACTICAL?

A circulator or shuttle service is the simplest response to providing convenient connections around the SBTC; however, this requires a substantial investment in equipment and upfront operating costs, as the number of vehicles and revenue hours needed to operate at a high level of frequency is considerable.

The parameters of a shuttle service would include:

- *A short alignment that takes 15-20 minutes to complete (7-10 minutes out, 7-10 minutes return).* Travel time for riders should not exceed 10 minutes as this is the proximate threshold for the time it takes to walk from the SBTC to the most significant employment sites.
- *High frequency.* Ideally, passengers should not have to wait more than five minutes between alighting from their bus or train at the SBTC to a shuttle, which would require a fleet of at least three vehicles in service plus one spare vehicle.

Because of its high costs and uncertain ability to generate substantial levels of ridership, a shuttle is not recommended at this time. A shuttle will be more cost-effective in the future when AV technology has progressed to the point where capital costs, as well as operating costs, fall below manual operation. As discussed earlier in this chapter, this is by no means an imminent condition but appears likely at some point in time in the future. In the meantime, planning an alignment and schedule can commence with passenger surveys and a more detailed and updated analysis of employment locations, employment density, and job characteristics of the geographic area.

6.5.2 USE OF EXISTING LOCAL ROUTES

Better utilizing the existing route network is also another option, but service cutbacks due to the pandemic and other systemic issues provide significant challenges. It should be noted that a similar shuttle in downtown Riverside, Route 54, was recently discontinued due to low ridership and duplication of other services. Prior to the pandemic, Omnitrans' signature bus service, the sbX BRT line, operated every 10 minutes during weekday peak periods. This high quality, high frequency, and highly visible service serves the E Street corridor and is quite convenient to some of downtown's employment concentration. These conditions provided a reliable connection for transit riders.

Another potential opportunity would be the alignment consolidation of Routes 1, 3, 4, and 15 to run along Arrowhead Avenue from Rialto Avenue to either 4th or 5th Street, providing a frequent connection between the SBTC and the city and county office complexes and other employment sites north/northeast of the facility. With shared alignment, pre-pandemic frequencies resulted in nine trips per hour – an average of seven minutes. If schedules are to be coordinated among the three routes and the service is effectively communicated to customers as a frequent connection, convenient service would result. Because these realignments would shift service on any particular route by only 1-2 blocks, the impact on existing riders should be minimal.

The configuration of the consolidated alignments is shown previously in Figure 49.

6.6 INNOVATIVE MOBILITY

As described in Chapter 3, various innovative and micromobility programs and services can be implemented in the short term and are considered low to medium effort activities. These forms of micromobility expand the reach of transit by providing first/last mile opportunities to and from the fixed-route system.

6.6.1 RIDE-HAILING

Partnerships with TNCs such as Uber and Lyft have been increasingly common among transit agencies including Omnitrans' Lyft RIDE program and a partnership between SBCTA, Omnitrans and Metrolink. As with many partnerships, Omnitrans' agreement with Lyft is limited to specific use-cases and amounts to ensure financial viability. The Lyft RIDE program allows for seniors over age 62 and users with disabilities to purchase up to $150 in discounted Lyft and taxi rides per month at a 50% discount.

In order to expand partnerships with TNCs, specific use cases should be determined, piloted, and evaluated for scaling. Coordinating schedule, trip tracking, and reservation platforms are essential to make a joint transit-TNC partnership viable. This requires a significant investment in staff time and expertise, as well as coordination with private TNC partners. Expansion of the Lyft RIDE program to users under age 62, for example, would require a larger financial investment from different funding sources to be financially viable. Currently, Measure I CTSA funding only allows to fund Senior and disabled projects so any expansion would require another funding source.

The SBCTA Lyft program, which partners with Omnitrans and Metrolink, allows all riders from three Metrolink stations (Montclair, Upland and Rancho Cucamonga) a discount of up to $35 to the Ontario International Airport.

Expansion of the SBCTA Lyft partnership with Metrolink and Omnitrans to more stations will require coordination, including cost-sharing, between public agencies. Other use cases to consider may include late night or overnight service, non-emergency medical transport, and first/last mile services beyond Metrolink stations (to major transit centers, for example).

In order to ensure long term feasibility of such services, funding must be determined beyond one-time sources, such as grants. Guidelines, requirements (such as data sharing or labor), and parameters for partnerships should also be determined at the outset of attempting to develop partnerships. In addition, governance models, especially across private and public partners, should be clear. Coordinating schedule, trip tracking, and reservation platforms are essential to make a joint transit-TNC partnership viable. This requires a significant investment in staff time and expertise.

As with public transit, the pandemic has decimated the TNC industry, and it is not possible to determine the future direction of ride-hailing at this time, but as conditions return to some form of normalcy, this additional first/last mile option should be explored.

6.6.2 VEHICLE SHARING

Carshare models have continued to shift over time, with various public failures in attempts at new services. As carshare feasibility depends strongly on market certainty for private providers, the region has the opportunity to utilize the shared benefits model to enhance access to carshare.

It is suggested that partnerships be developed with bike-share, scooter-share, and car-share entities to accommodate docking and parking facilities, where space is available, at existing transit centers and proposed mobility hubs. Soliciting local sharing services, such as the non-profit eGo CarShare in Boulder and Denver, Colorado, for prime parking spaces at these new connectivity hubs, is preferable.

Vehicle sharing may also be incentivized in the form of carpooling or vanpooling. While many of these programs are run through private employers or as ad-hoc agreements (such as slugging or casual carpool), they can be formalized through incorporation into software the region may be utilizing (such as MaaS platforms) or incentivized through dedicated infrastructure, similar to carshare. The Bay Area's 511 Carpool program, for example, offers guaranteed parking for riders who use the app to carpool together to transit stations.

6.7 IMPROVED INTERFACE WITH COMMUTER RAIL

Several of the Task 3 concepts will enhance the integration of bus service with the existing and planned commuter rail lines serving the Metro-Valley.

6.7.1 METROLINK

The following concepts will enhance connectivity to Metrolink:

- The Foothill Boulevard Intervalley Route will provide a faster and more convenient connection to the Fontana and San Bernardino Metrolink stations for residents and workers in this corridor
- The Sierra Avenue-Baseline Road Intervalley Route will provide a faster and more convenient connection from the Fontana North and San Bernardino stations to the job sites in Rialto along and Bear Baseline Road
- The Ontario OmniRide Home-to-Hub microtransit service will connect the Ontario East Station with the massive employment zone in this area
- The San Bernardino Core OmniRide Home-to-Hub microtransit service will connect the San Bernardino Station with the entire downtown and central area of San Bernardino
- Vehicle sharing and ridehailing opportunities would be accommodated at the San Bernardino, Fontana Metrolink and Montclair transit centers

6.7.2 ARROW SERVICE

The following concepts will enhance connectivity to the Arrow/Redlands commuter rail line between San Bernardino and Redlands:

- The three Intervalley routes – Foothill Boulevard, San Bernardino Avenue and Sierra-Baseline will provide a fast and convenient connection for residents along these corridors to the San Bernardino Station to Arrow service
- Higher frequency service on Route 8 will enhance East Valley connections to Arrow stations at the Tippecanoe, Esri and Downtown Redlands stations
- The San Bernardino Core OmniRide Home-to-Hub microtransit service will connect the San Bernardino Station with the entire downtown and central area of San Bernardino

The sbX line comes within four blocks – a distance of one-third of a mile – of the Tippecanoe Station. Route 8 provides a connection between the Tippecanoe sbX station and Tippecanoe Arrow station. A reroute of the sbX line would provide more convenient, cross-platform connections between these two high capacity transit lines. While not suggested at this time, consideration should be given to analyzing a potential modification to the sbX line to maximize the utility of both lines.

6.8 COST ESTIMATES

Estimated operating and capital costs are of the concepts described in this chapter are presented in Table 15. Costs are on a high level, conceptual, order of magnitude level in current year dollars. Operating costs are based on most recently available NTD data inflated to 2020 for fixed route at $112.000 for fixed route; the contracted hourly rate for microtransit as provided by Omnitrans is $90.00. Estimated costs are rounded to the near 100,000.

6.9 IMPLEMENTATION ISSUES AND TIMING

A summary of the suggested concepts, along with key benefits and challenges, is found in Table 16. Although this set of concepts can help transform the Metro-Valley services to cope with the region's economic challenges, they depend on additional investments of budget resources, political consensus and timing of technological development. All, however, have a theme: that there are multiple avenues to help reshape public transit and shape a brighter future of San Bernardino County.

Table 15: Estimated Costs

CONCEPT	SERVICE / FACILITY	SERVICE SPAN	FREQUENCY	ADDITIONAL PEAK BUSES + 20% SPARES	ANNUAL REVENUE HOURS	ADDITIONAL ANNUAL OPERATING COST	EXISTING SERVICE REDUCTION	NET ANNUAL OPERATING COST	CAPITAL COST
Inter-Valley Limited Stop Network	Foothill	5:00a-11:00p	30 min	11	24,170	$2,705,832	n/a	$2,705,832	$11 m
	San Bernardino Ave	5:00a-11:00p	30 min	10	26,690	$2,987,946	$524,270 (reduce Rt 61 service by 1 bus)	$2,463,676	$10 m
	Sierra-Baseline	5:00a-11:00p	60 min	8	16,200	$1,813,590	n/a	$1,813,590	$8 m
Additional Higher Frequency Routes	8	5:00a-10:00p	15 min	2	4,490	$502,656	n/a	$502,656	$2 m
	215	5:00a-10:00p	15 min	0	2,200	$246,290	n/a	$246,290	n/a
Mobility Hubs	Ontario Mills	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$5 - $15 m
	Rancho Cucamonga	n/a	n/a	n/a	n/a	n/a	n/a	n/a	$5 - $15 m
OmniRide Microtransit	Colton Home-to-Hub	6:00a-8:00p	On-demand	2	3,570	$321,000	$192,000 (10-minute savings per trip by streamlining alignment in Colton)	$129,000	Lease through contract
	Yucaipa Home-to-Hub	6:00a-8:00p	On-demand	3	7,140	$643,000	$405,000 (elimination of Rt 319)	$238,000	Lease through contract
	N. Rancho Cucamonga Home-to-Hub	6:00a-8:00p	On-demand	3	7,140	$643,000	$872,000 (delete Rt 85 segment north of proposed Rancho Cucamonga mobility hub)	-$229,000	Lease through contract
	San Bernardino Core Home-to-Hub	6:00a-8:00p	On-demand	2	3,570	$321,000	$736,000 (streamlining of local alignments within zone)	-$415,000	Lease through contract

CONCEPT	SERVICE / FACILITY	SERVICE SPAN	FREQUENCY	ADDITIONAL PEAK BUSES + 20% SPARES	ANNUAL REVENUE HOURS	ADDITIONAL ANNUAL OPERATING COST	EXISTING SERVICE REDUCTION	NET ANNUAL OPERATING COST	CAPITAL COST
	Ontario Hub-to-Jobs		On-demand	5	14,280	$1,285,000	$1,089,000 (truncate Rt 82 south of Ontario Mills Mall and Fontana South TC)	$196,000	Lease through contract
	Fontana Hub-to-Jobs		On-demand	3	7,140	$643,000	$402,000 (eliminate Rt 329)	$241,000	Lease through contract
	Bloomington-Colton		On-demand	2	3,570,	$321,000	n/a	$321,000	Lease through contract
Downtown San Bernardino	Consolidated Routes-Access to Jobs	No change	No change	n/a	n/a	n/a	n/a	n/a	n/a
Innovative Mobility	Ridehailing	n/a	On-demand	n/a	n/a	n/a	n/a	$200,000 (full time coordinator)	n/a
	Vehicle Sharing	n/a	On-demand	n/a	n/a	n/a	n/a		$5 - $15 m (rough estimate of physical modifications to existing transit/transfer centers to accommodate carshare)
Net Estimated Cost								$8,413,044	$46 - $75 m

Table 16: Summary

CONCEPT	SERVICE/FACILITY	RATIONALE	CHALLENGES	IMPLEMENTATION TIMEFRAME
Inter-Valley Limited Stop Network	Foothill Blvd.	Local, all-stops service is slow, with no higher speed options in major corridors connecting the East Valley and West Valley. The market analysis suggests that demand exists for better connections. The current service in these corridors is generally productive and should remain, but the overlay of limited stop service will provide an option for riders making longer, inter-valley trips. The sbX and WVC BRT lines do not connect and are several miles apart; these new routes will provide a strong connection between the two high capacity/high frequency lines.	Due to their length, and because of their 30-minute suggested frequency, these routes represent and significant increase in annual operating costs. With the need to retain current underlying local, all-stops service, there are no off-setting service and cost reductions. The vehicle requirement, however, may be able to be absorbed by September 2020 service reductions, which reduced the systemwide peak vehicle requirement. Driver costs comprise the majority of operating costs. Automated bus technology has not yet progressed to enable conversion to AV, and the potential application of this technology that is affordable in terms of capital cost and results in lower operating costs	2022.Recommend that service recovery be given time to regenerate ridership and greater budget stability. Foothill Blvd. is the most heavily used transit corridor of the three and would be implemented first. Possibility of conversion to AV not likely until the 2030's..
	San Bernardino Ave.			2023-2025 depending on budget situation. Possibility of conversion to AV not likely until the 2030's..
	Sierra-Baseline			2025-2027 depending on budget situation. Possibility of conversion to AV not likely until the 2030's.
Additional High Frequency Routes	8	Existing productivity is on par with current high frequency routes suggesting that additional riders can be generated.	Increase in operating costs.	2021-2022 depending on budget.
	215			
Mobility Hubs	Ontario Mills	Implementation of WVC can be enhanced by broaden the scope of BRT stations at these two locations to include mobility hubs that will enhance first/last mile opportunities.	Minimal operating cost but significant capital cost. Off-street facilities will require property acquisition that may be problematic due to existing uses and ownership. Off-street facilities are also practical but may require some additional property. Permits and related jurisdictional requirements will require time and resources.	2024-2025, to coordinate with WVC implementation schedule
	Rancho Cucamonga			

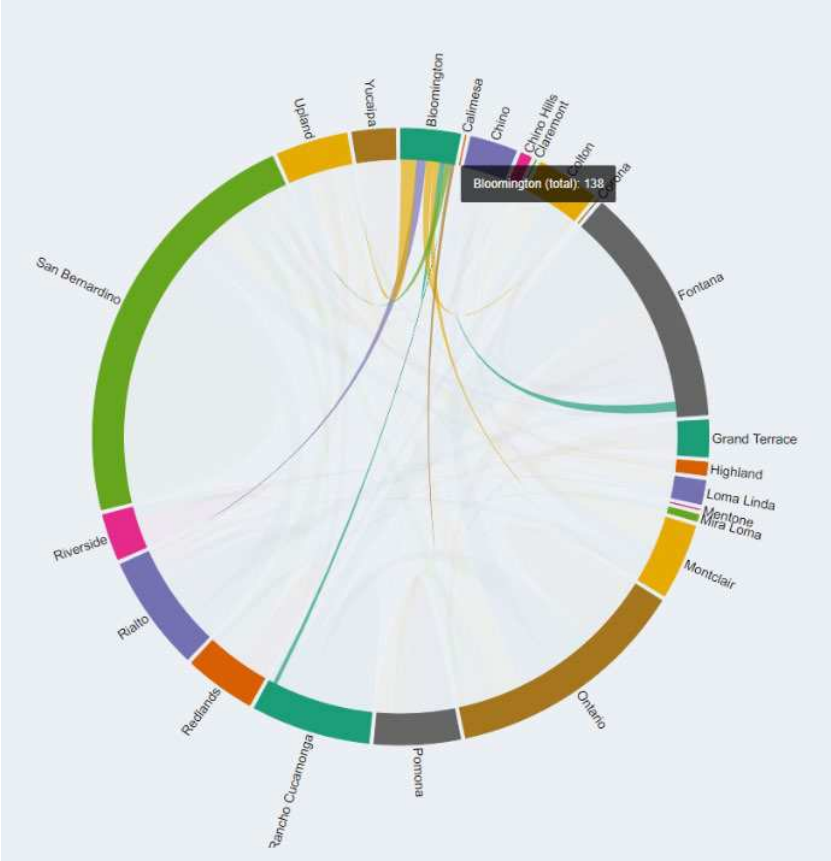
CONCEPT	SERVICE/FACILITY	RATIONALE	CHALLENGES	IMPLEMENTATION TIMEFRAME
OmniRide Microtransit	Yucaipa Home-to-Hub	As demonstrated by the recent introduction of the Chino Hills service, microtransit exhibits the potential to broaden ridership capture while reducing operating costs. Fixed route service in lower density and "edge" area is typically less productive than in major corridors and more densely developed areas. As an experiment and pilot, actual outcomes remain to be determined. Can allow for offsetting cost reduction from eliminated or truncated existing local fixed route service in these areas. Current AV technology is focusing on small area service; microtransit zones have similar characteristics and can be candidates for initial AV conversion.	Ridership response to Chino Hills microtransit remains to be seen; time must be given to find its market. It requires ongoing marketing and promotion. Because of uncertain response, and the difficulty to predict it, vehicle and labor requirements may fluctuate. Overnight service is essential for many workers; Hub-to-Jobs microtransit require longer operating hours to meet rider needs, but this results in higher operating costs with likely ridership response to be modest, although essential for the user.	2022. Wait to see performance outcomes of Chino Hills microtransit. Recommended as Omnitrans' second microtransit pilot as the characteristics of Yucaipa are somewhat similar to Chino Hills. Depending on how technology and cost progress, may be eligible for AV conversion this decade.
	N. Rancho Cucamonga Home-to-Hub			2023
	Colton Home-to-Hub			2024
	San Bernardino Core Home-to-Hub			2025
	Ontario Hub-to-Jobs			2023. Access to jobs is an important priority; the breadth of jobs served in the Ontario zone suggests that a pilot be developed once the Home-to-Hub operating issues are worked out and service refined as needed.
	Fontana Hub-to-Jobs			2024
	Bloomington-Colton			2025

CONCEPT	SERVICE/FACILITY	RATIONALE	CHALLENGES	IMPLEMENTATION TIMEFRAME
Downtown San Bernardino	Consolidated Routes-Access to Jobs	A shuttle service would be expensive with an uncertain prognosis for ridership generation. This alternative uses existing services and makes modest modifications to create a frequent "trunk line" to employment clusters east of E Street.		
Innovative Mobility	Ridehailing	Enhances first/last mile travel opportunities and encourage greater use of the fixed route system. Omnitrans has experience with Lyft to supplement special needs transportation; the current Metrolink Lyft program can be used by Omnitrans customers.	Additional staffing is required to establish and operate programs. Dealing with TNCs can be a challenged, exacerbated by the impacts of the pandemic.	2021
	Vehicle Sharing	Accommodations at transit/transfer centers and proposed mobility hubs. Enhances first/last mile travel opportunities and encourage greater use of the fixed route system.	Vehicle sharing requires additional space at transit centers, which may need to be acquired. On-street space can be used if available, but the host cities must grant curbside access in most areas, which can be a time-consuming and uncertain process. Security and safety enhancements may be required. Development of vehicle sharing programs requires additional, in-depth study. Public agencies generally use some combination of "carrot and stick" incentives and penalties to ensure long-term commitments from vehicle sharing companies. These include some level of "insurance" from the public entity, and consequences if contract requirements are not met. With these conditions in pace, companies cannot pull services suddenly but have some mitigation options (such as limited support from the public entity in the case of many bikeshare programs) if there is a need.	2022-2028

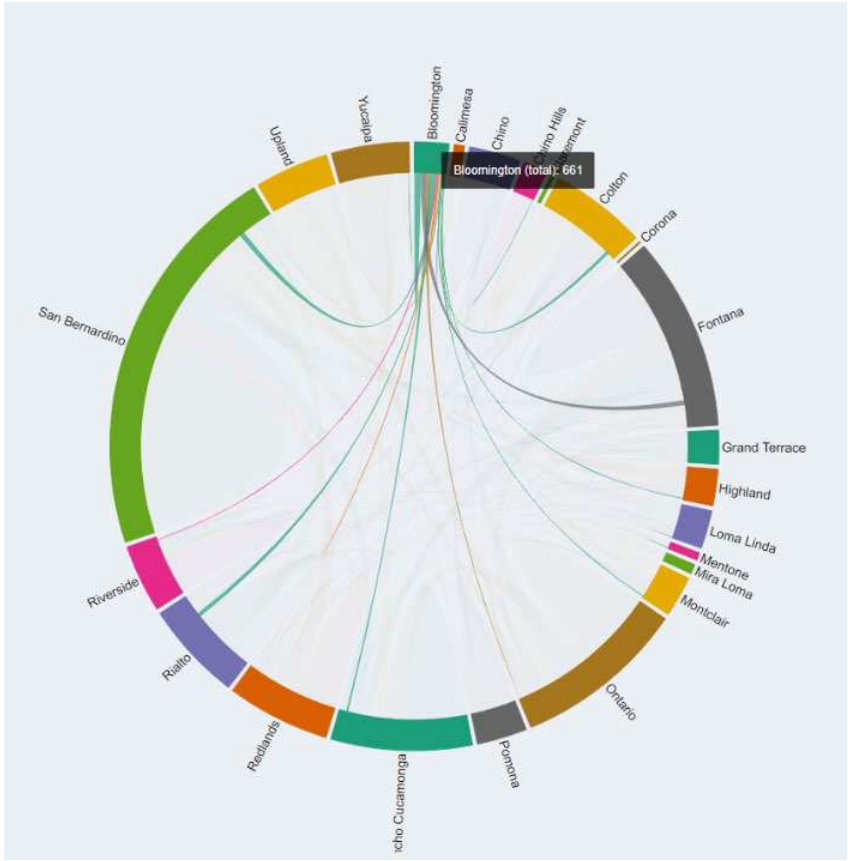
APPENDIX A: TRAVEL DEMAND BY COMMUNITY

Source: CTPP data from American Community Survey

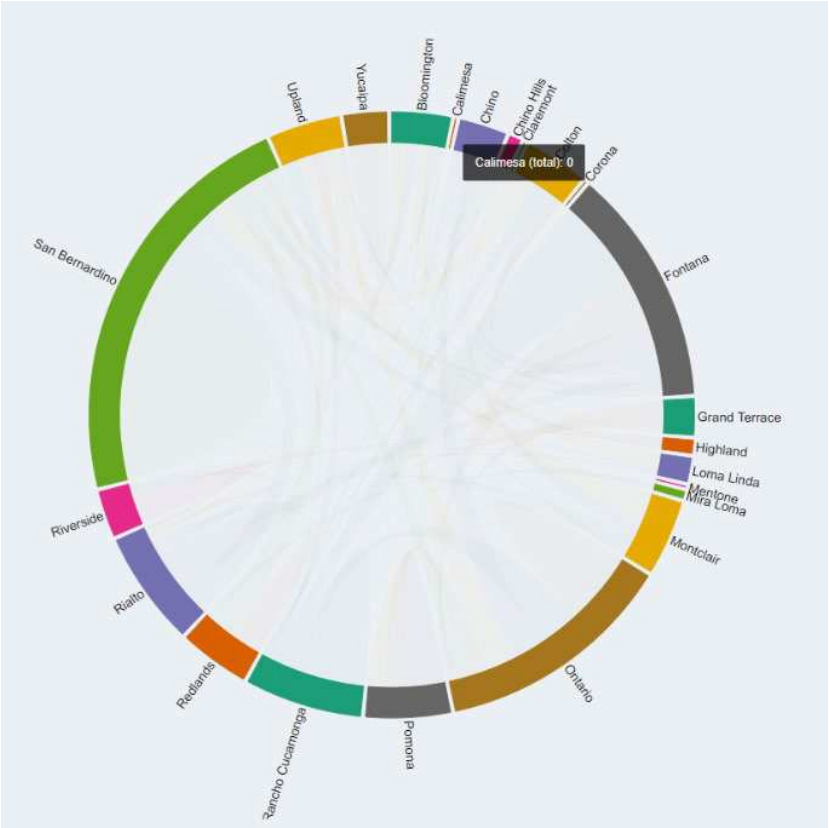
Bloomington: Existing Transit



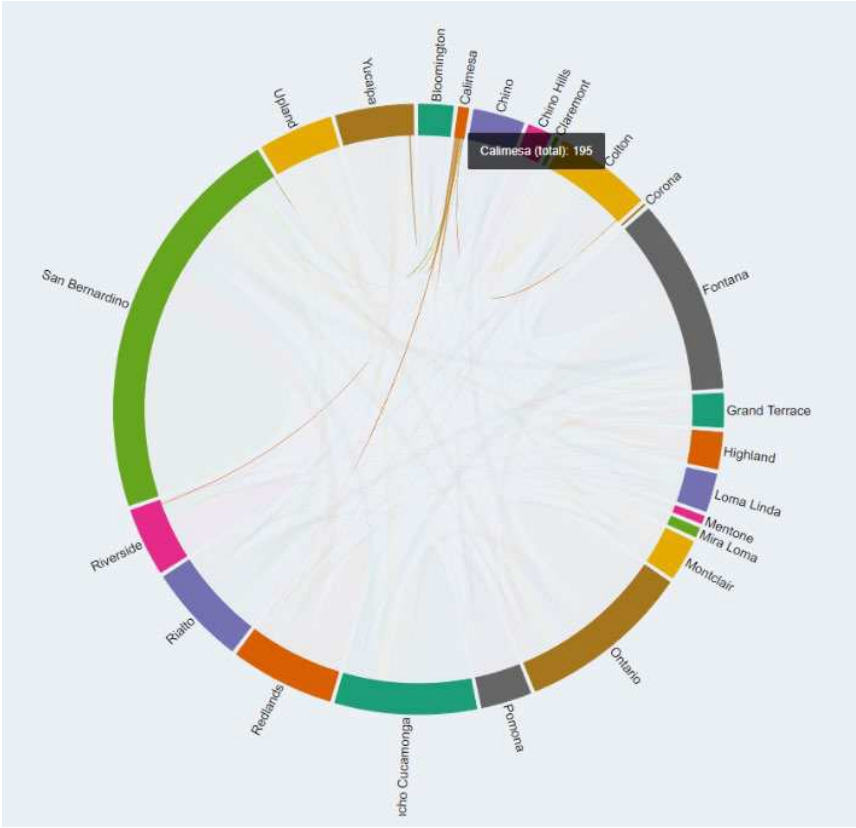
Bloomington: Potential Transit



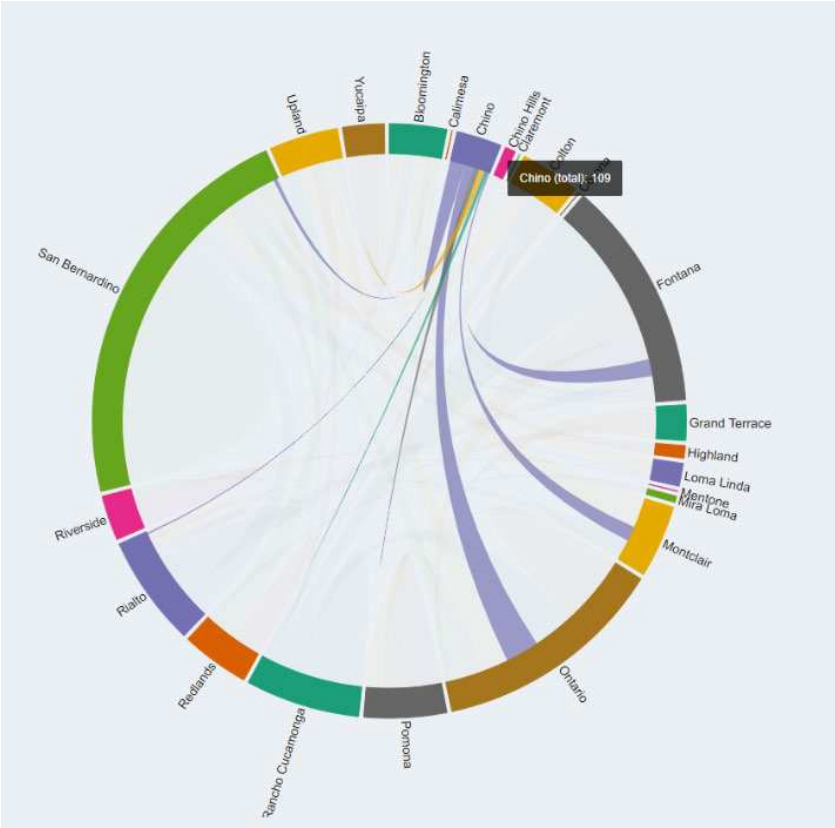
Calimesa: Existing Transit



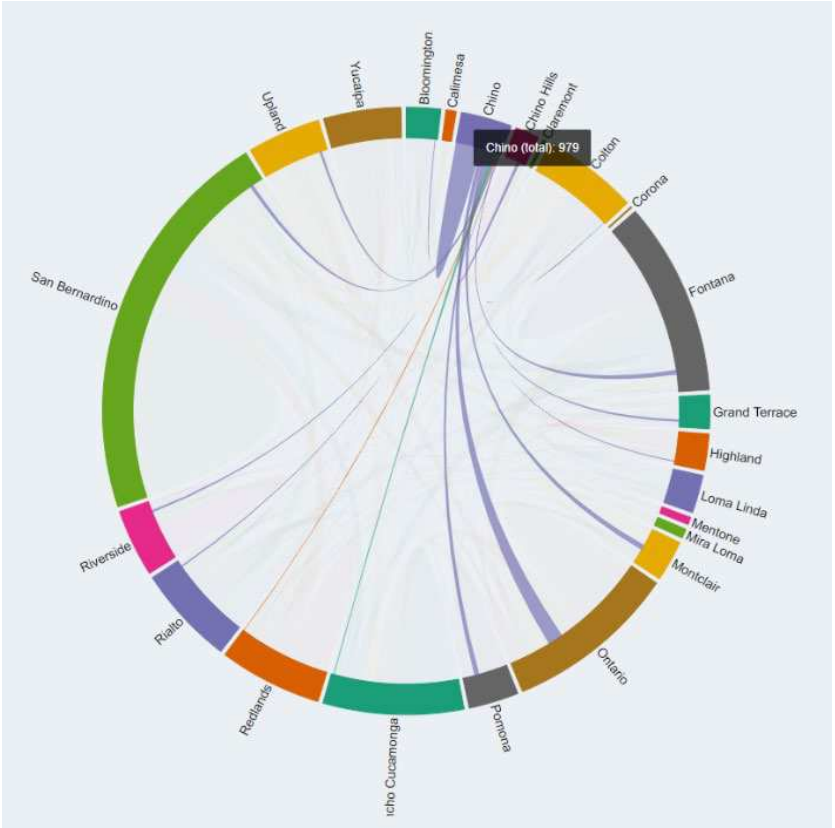
Calimesa: Potential Transit



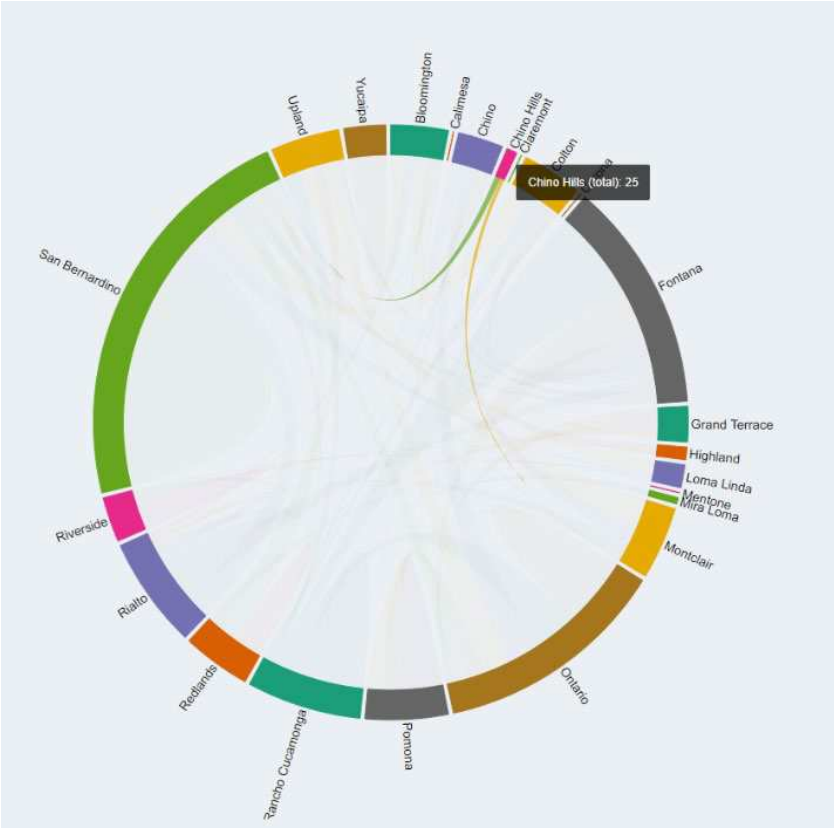
Chino: Existing Transit



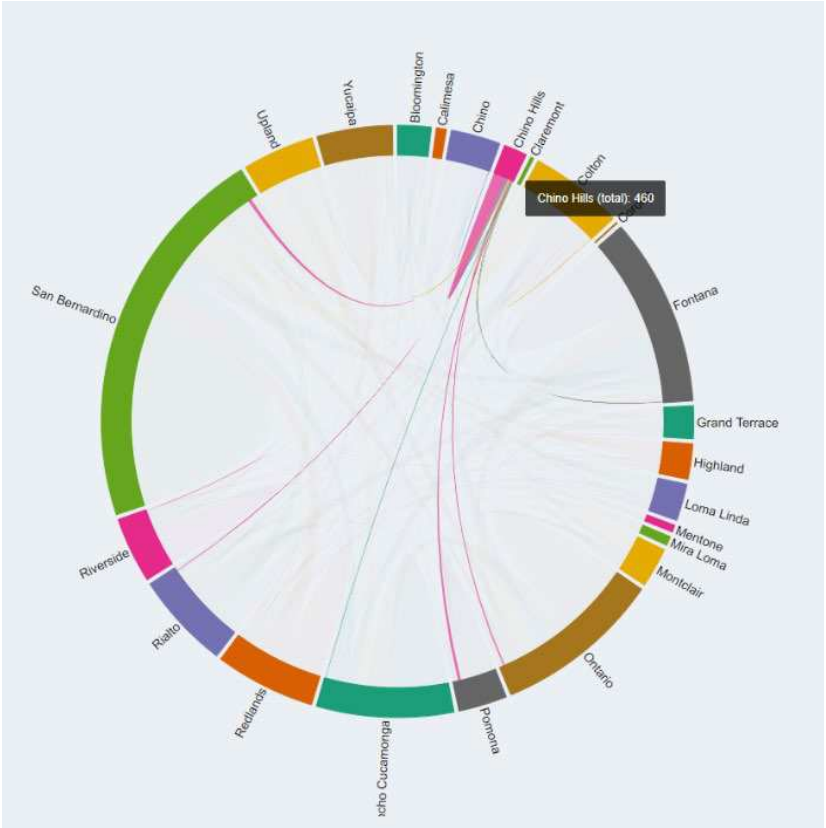
Chino: Potential Transit



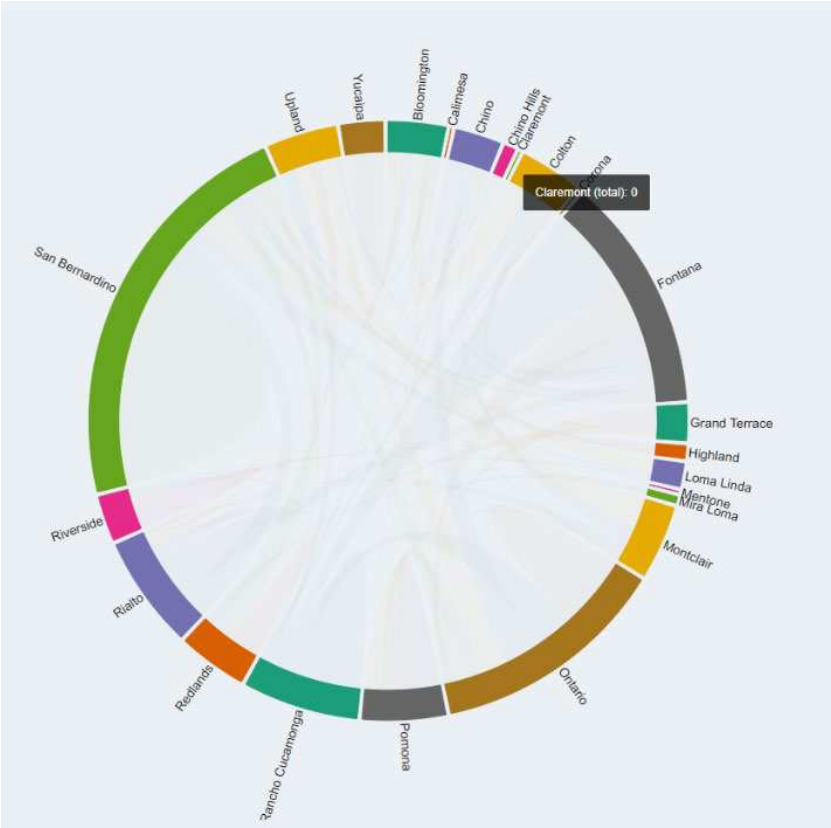
Chino Hills: Existing Transit



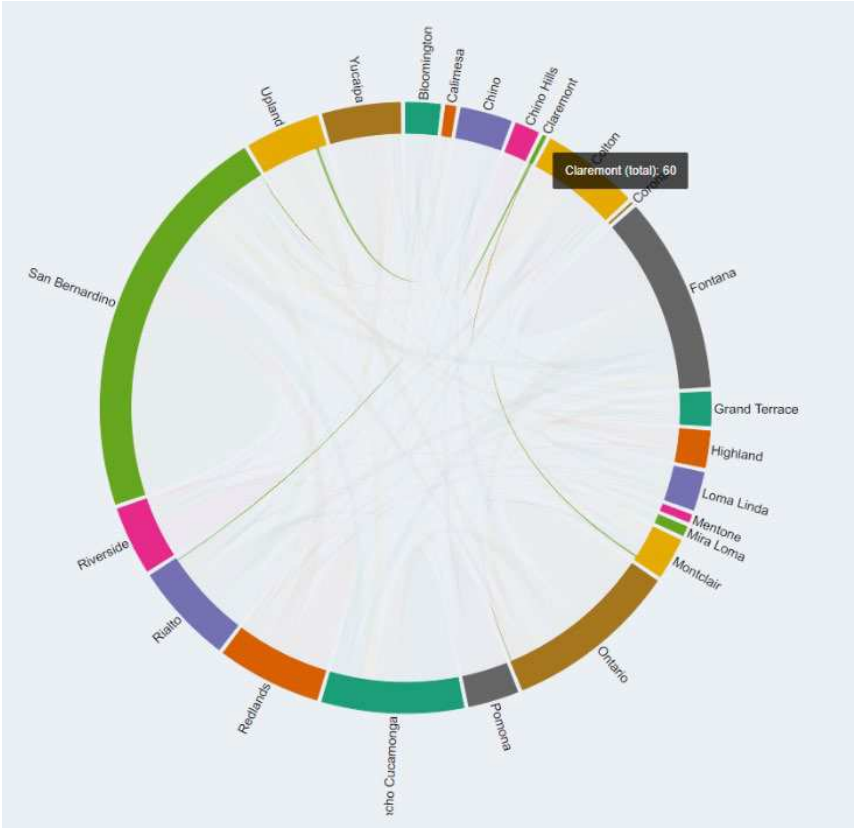
Chino Hills: Potential Transit



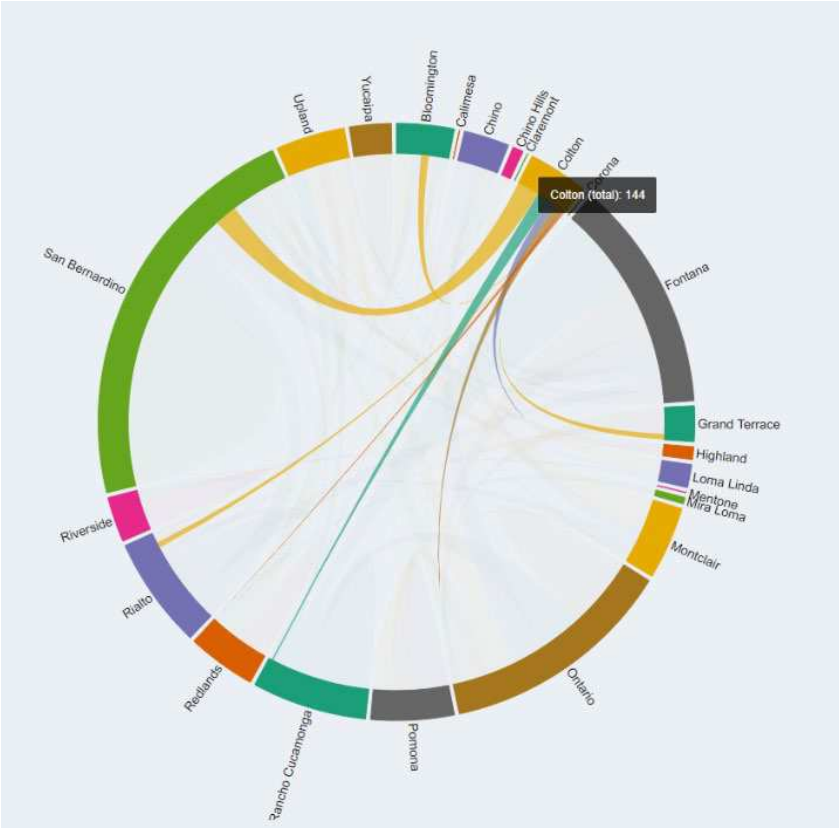
Claremont: Existing Transit



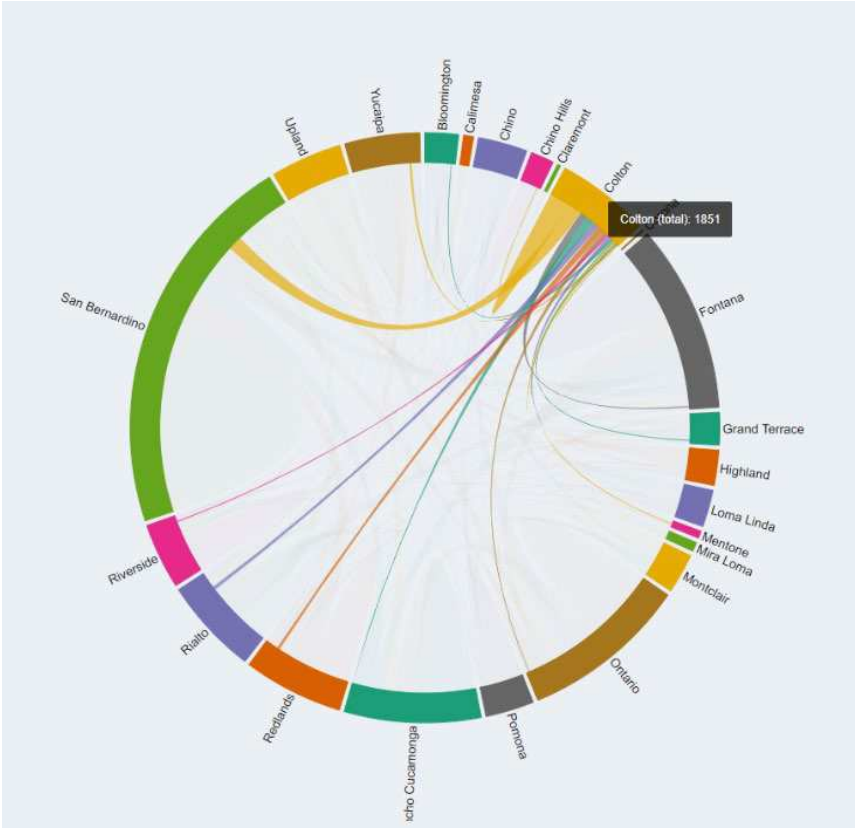
Claremont: Potential Transit



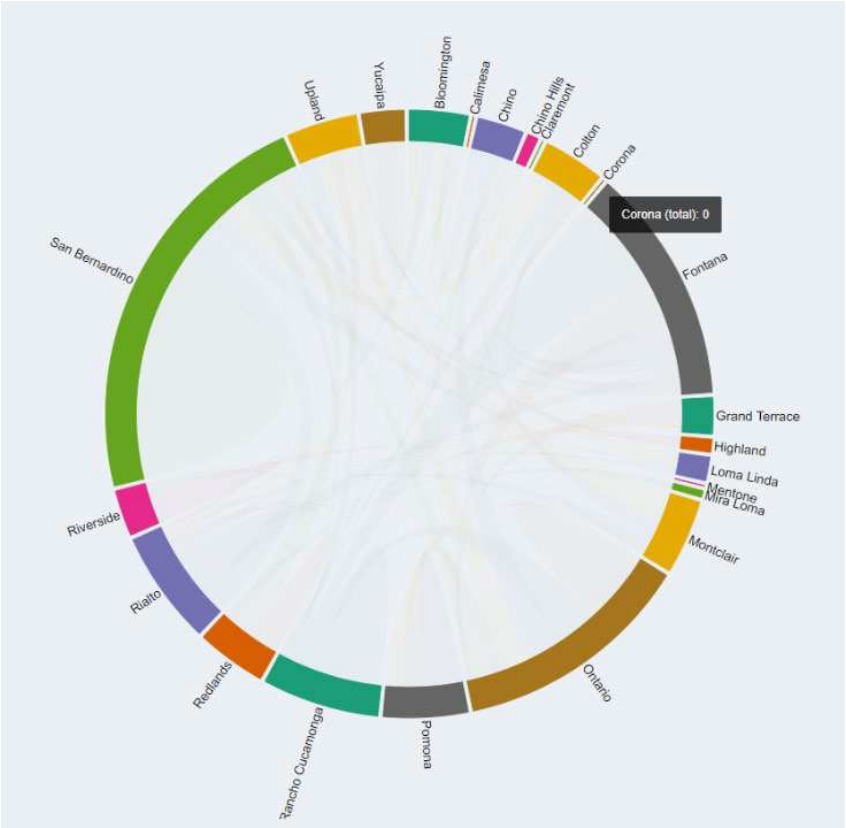
Colton: Existing Transit



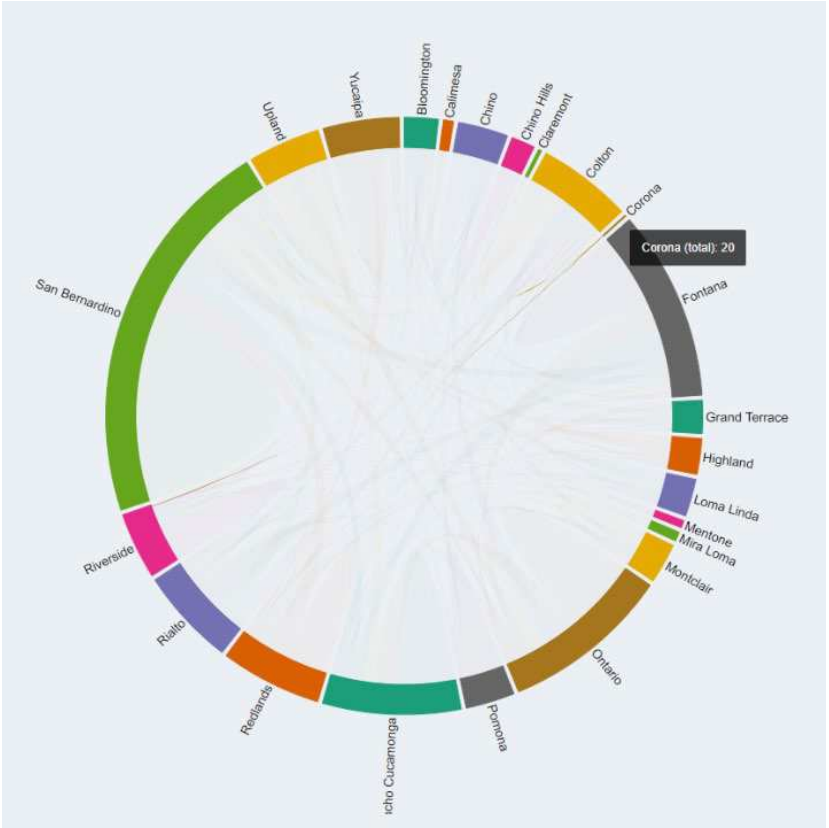
Colton: Potential Transit



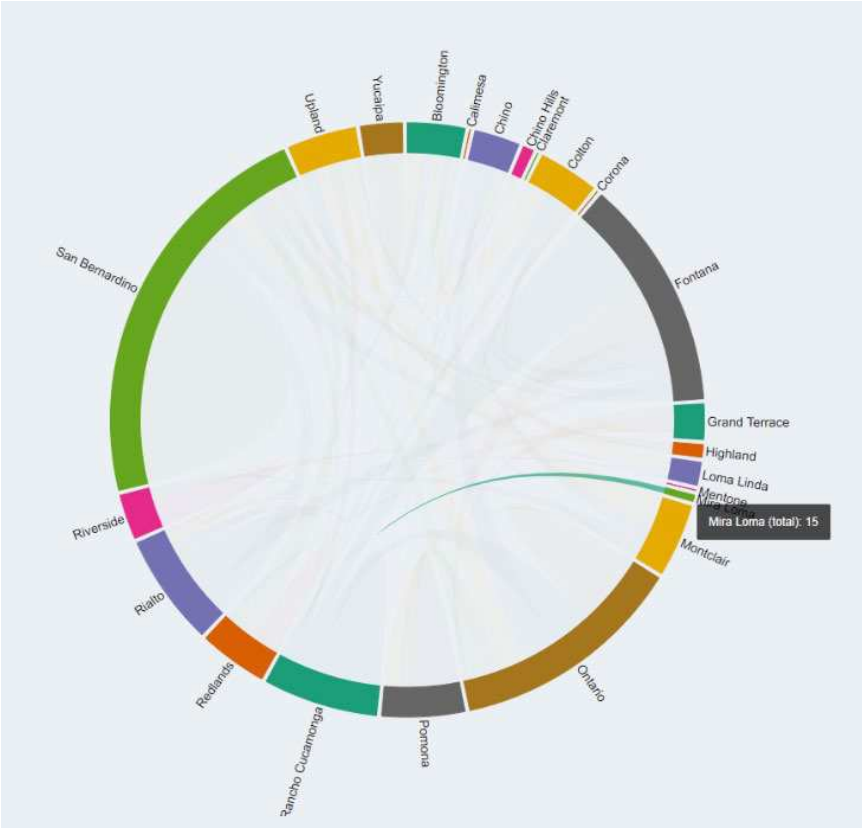
Corona: Existing Transit



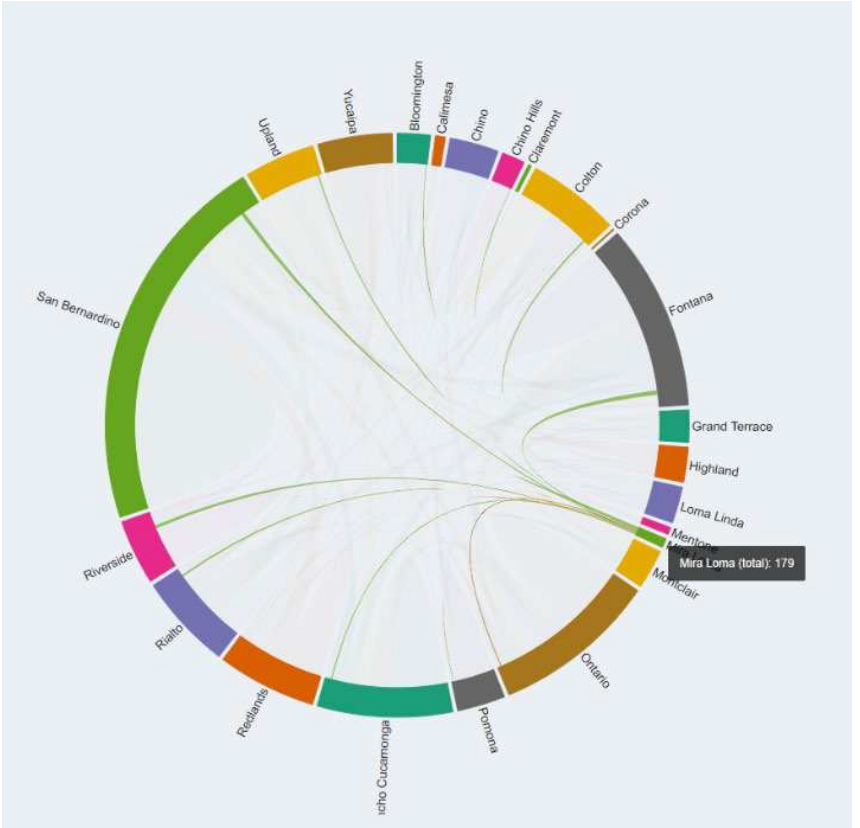
Corona: Potential Transit



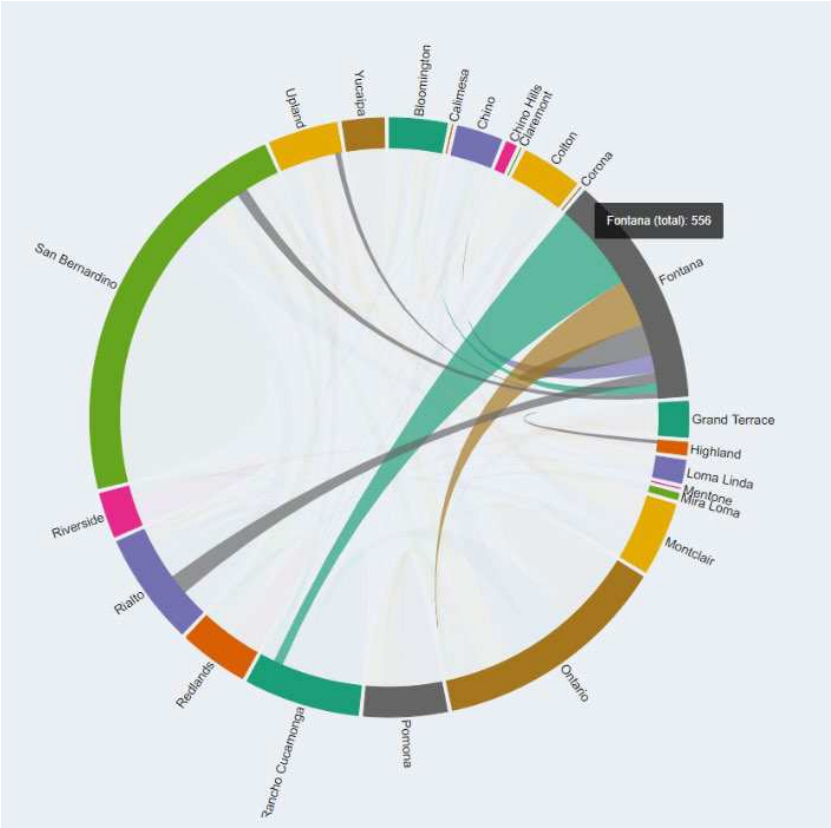
Eastvale/Jurupa Valley: Existing Transit



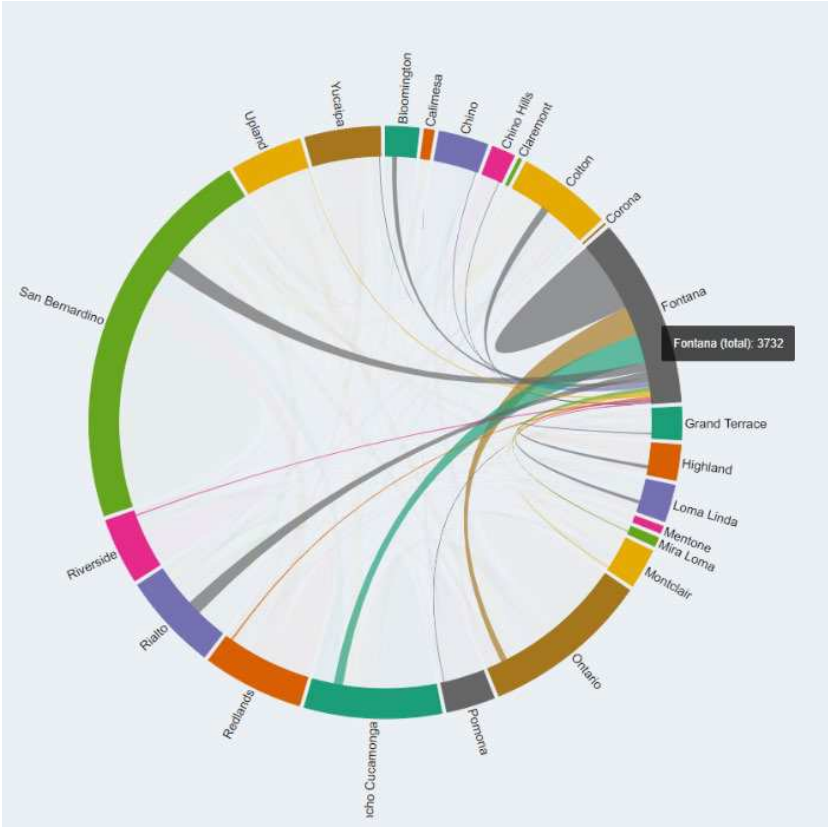
Eastvale/Jurupa Valley: Potential Transit



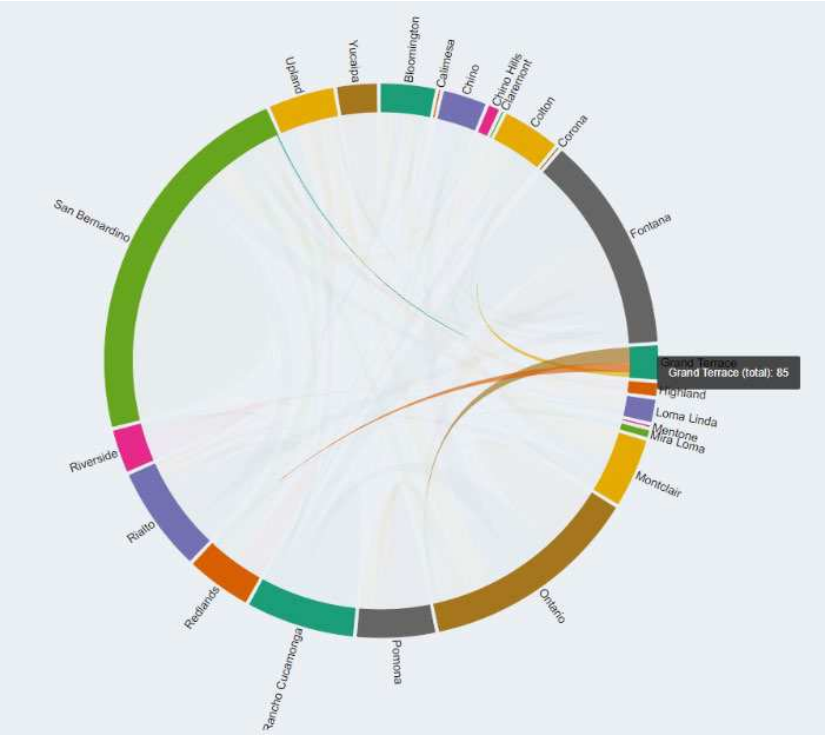
Fontana: Existing Transit



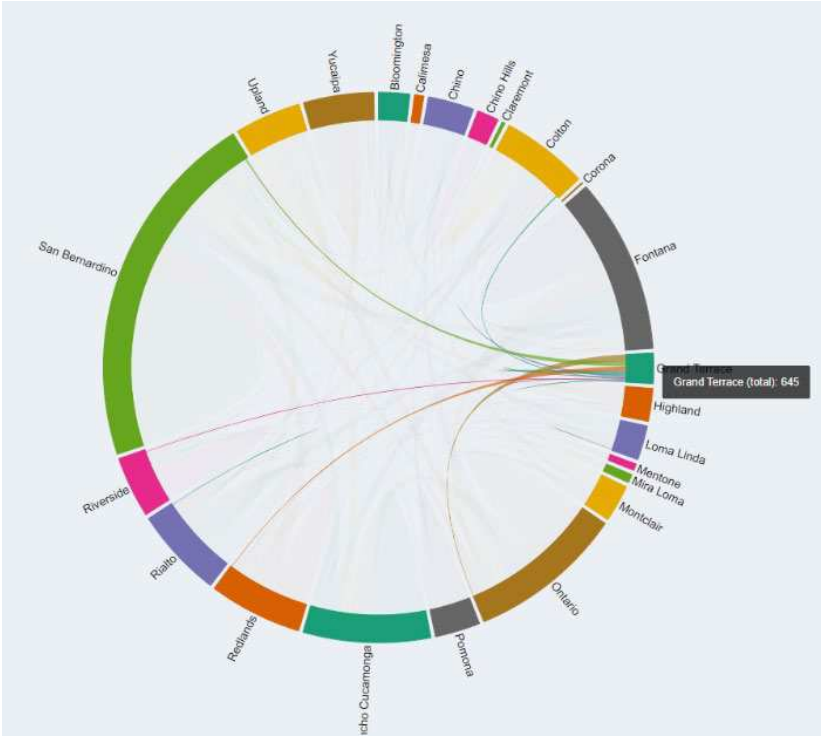
Fontana: Potential Transit



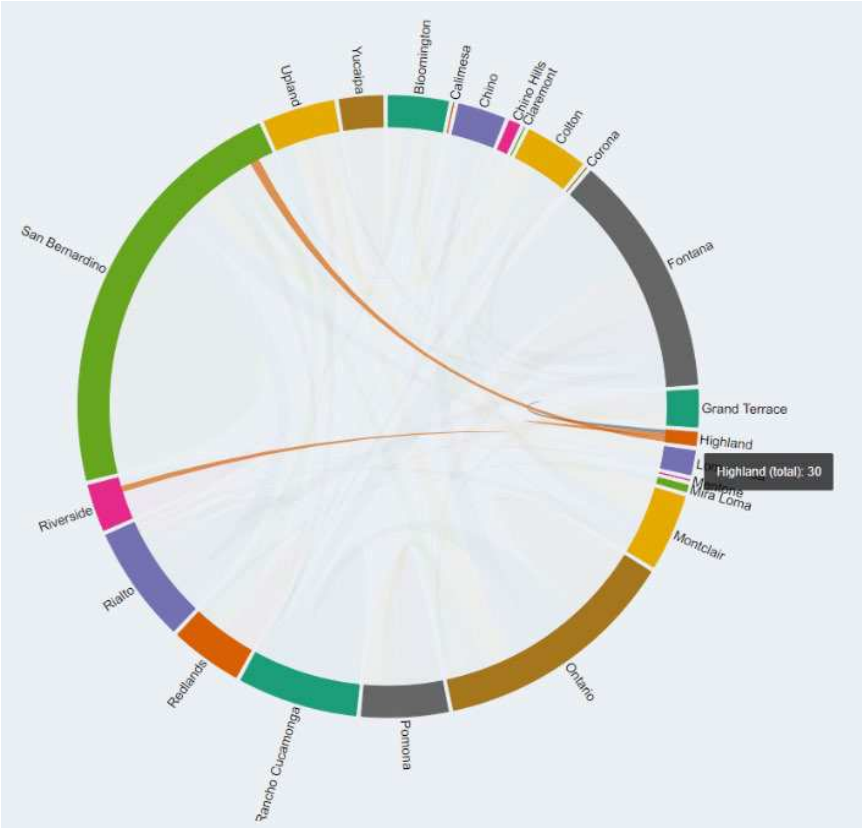
Grand Terrace: Existing Transit



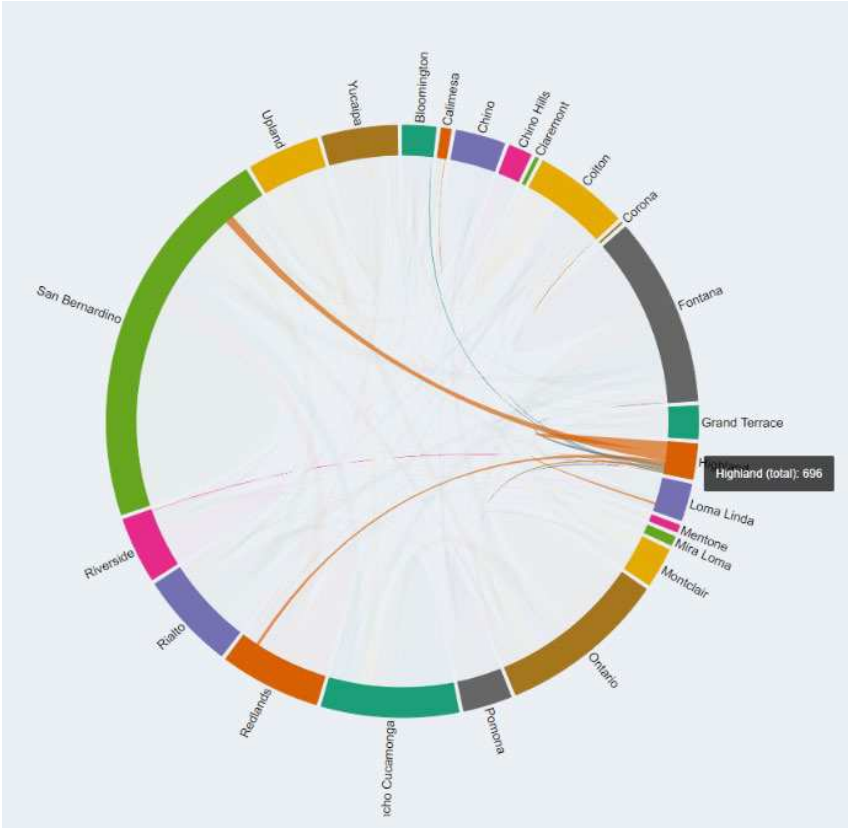
Grand Terrace: Potential Transit



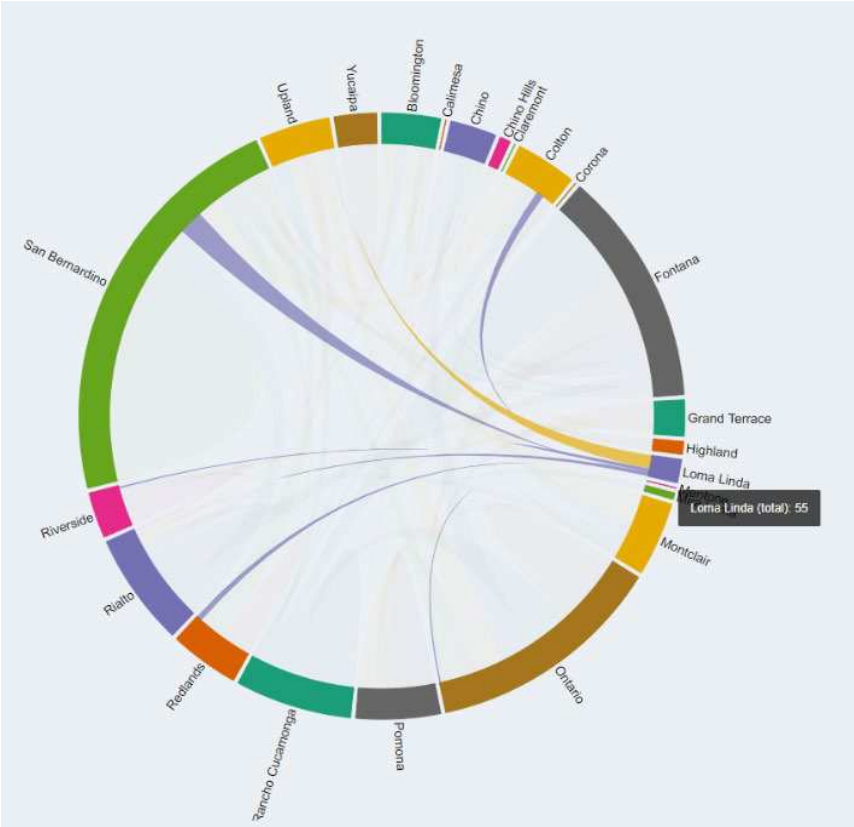
Highland: Existing Transit



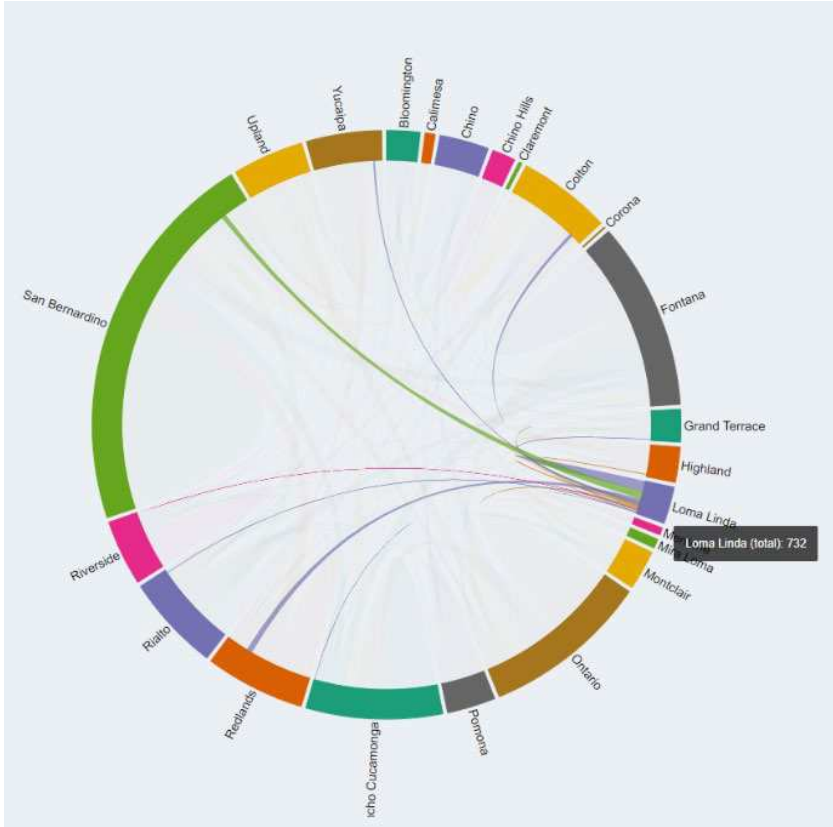
Highland: Potential Transit



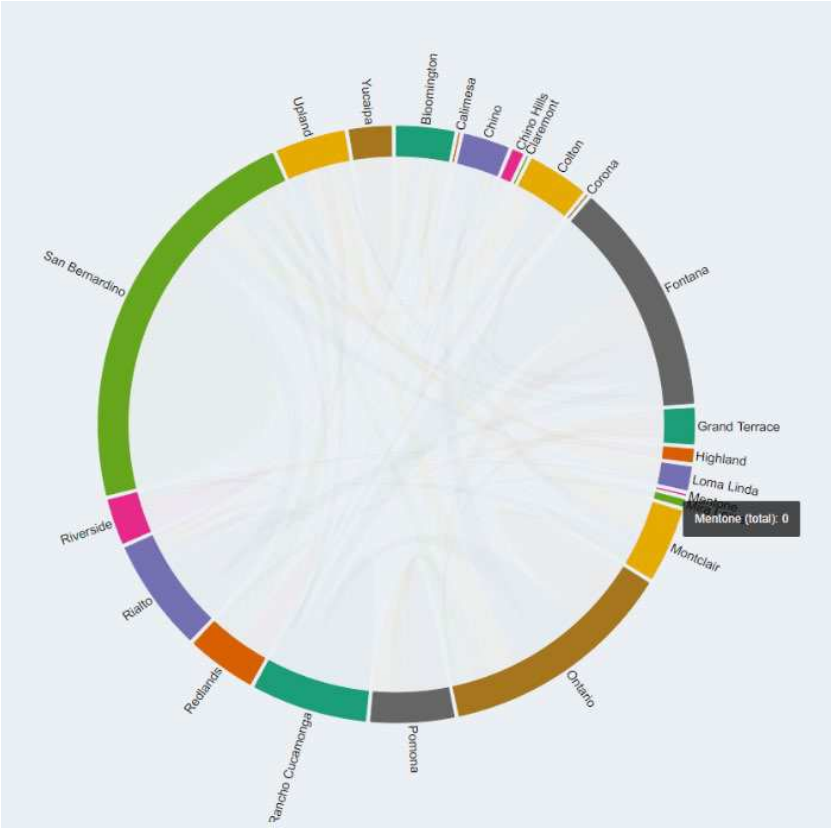
Loma Linda: Existing Transit



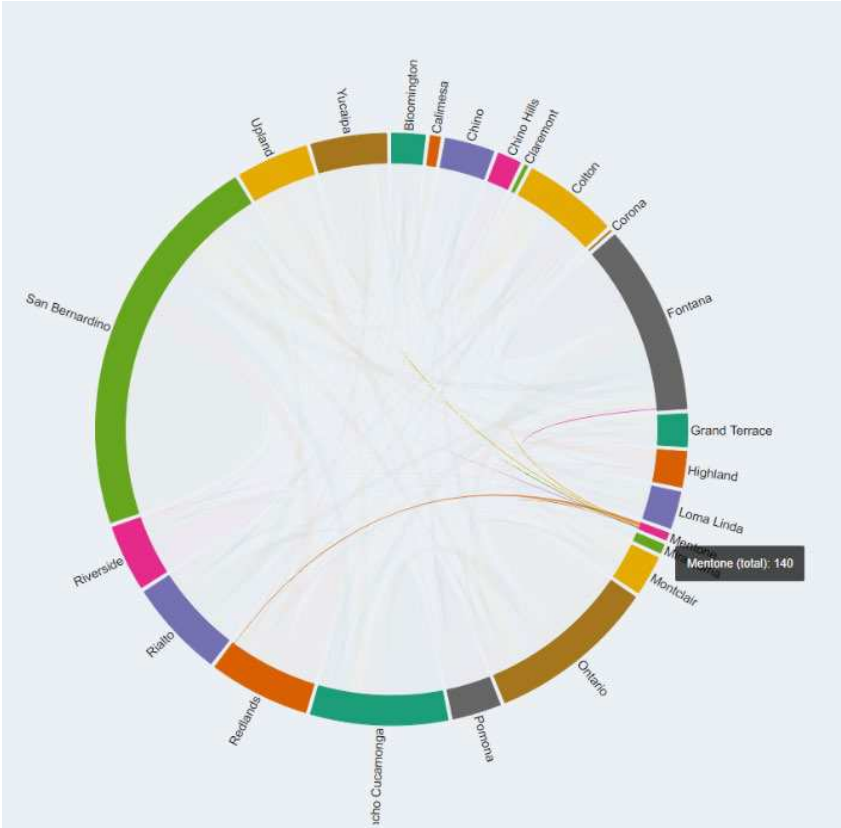
Loma Linda: Potential Transit



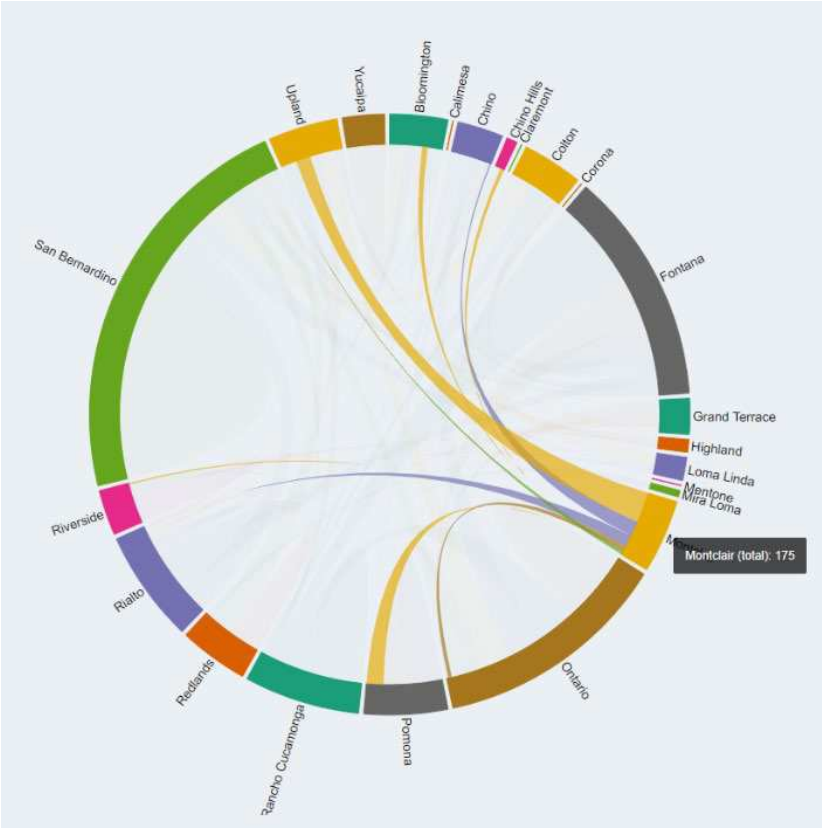
Mentone: Existing Transit



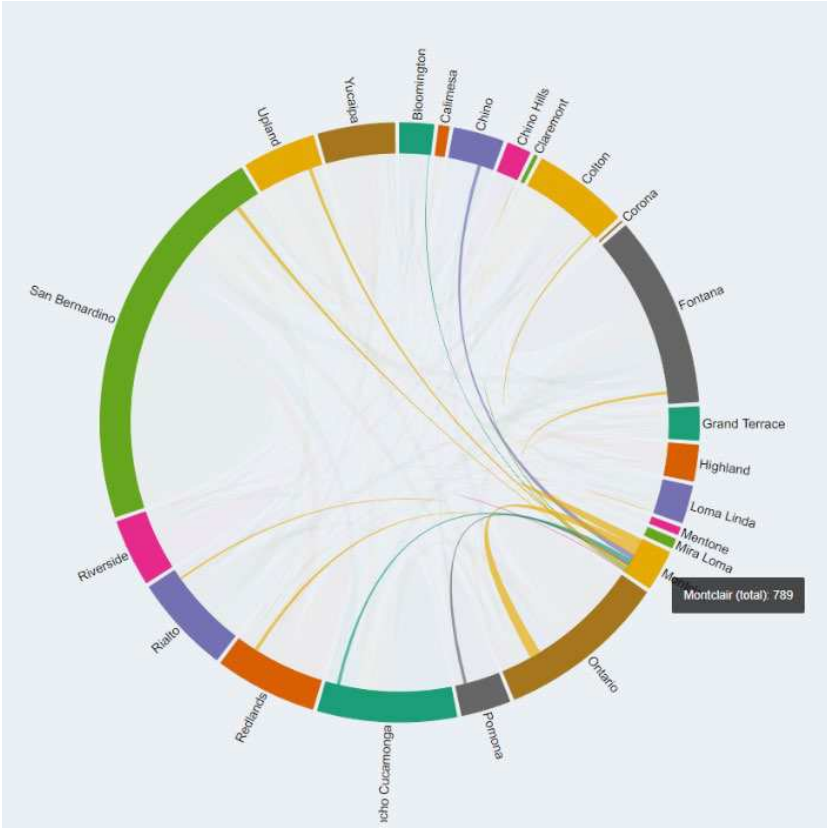
Mentone: Potential Transit



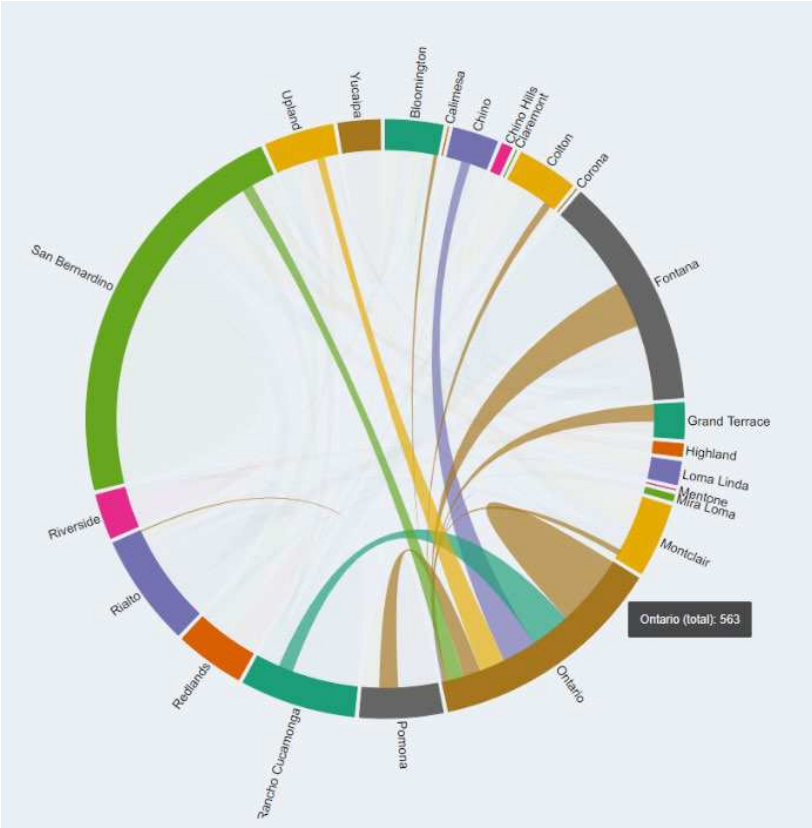
Montclair: Existing Transit



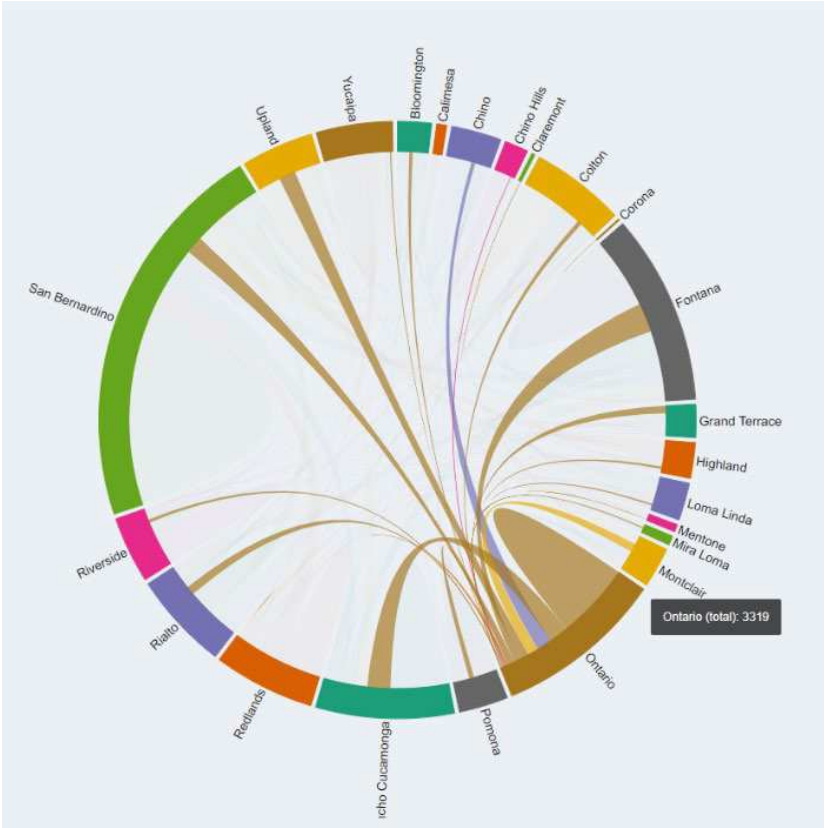
Montclair: Potential Transit



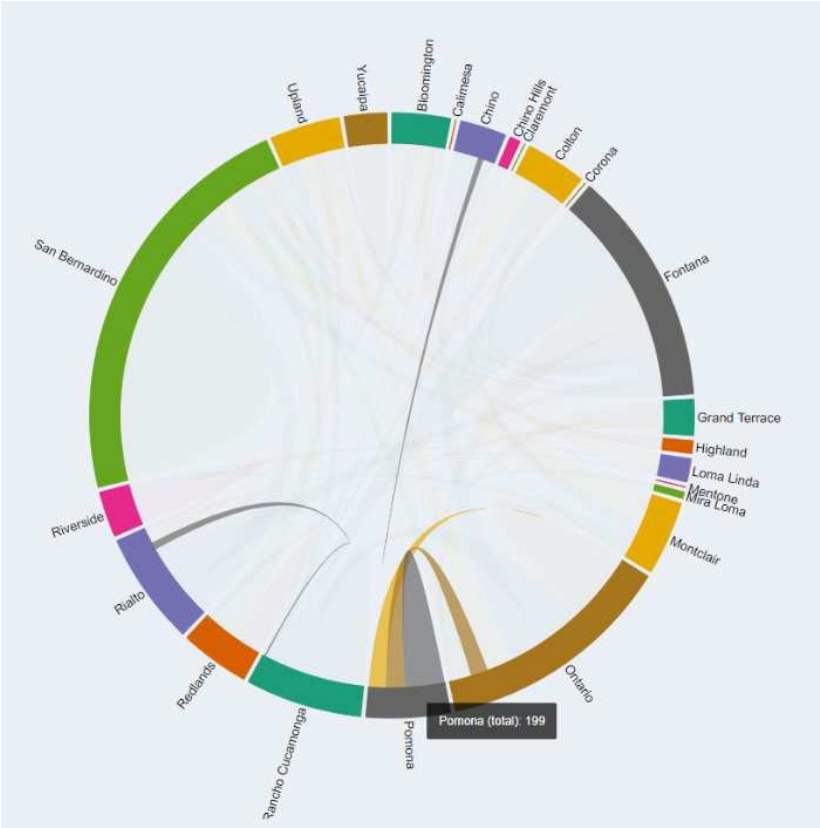
Ontario: Existing Transit



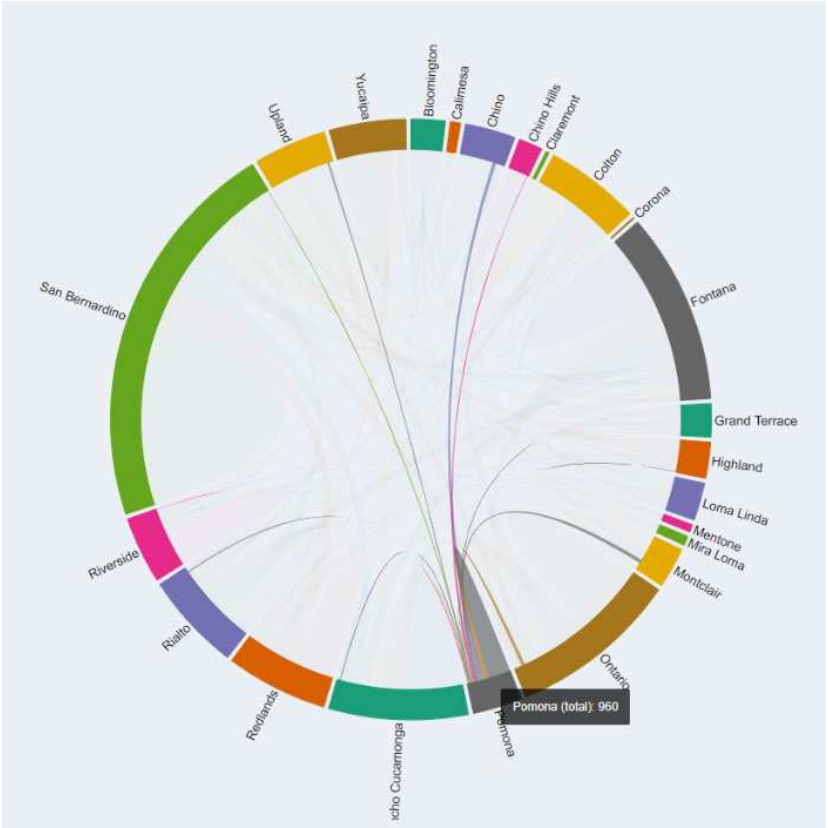
Ontario: Potential Transit



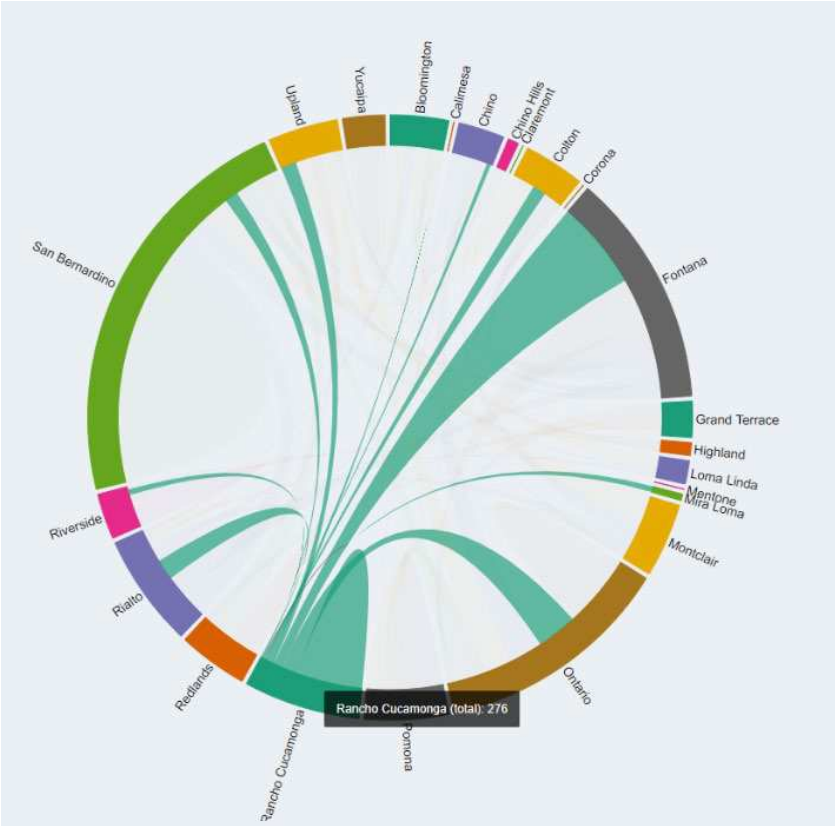
Pomona: Existing Transit



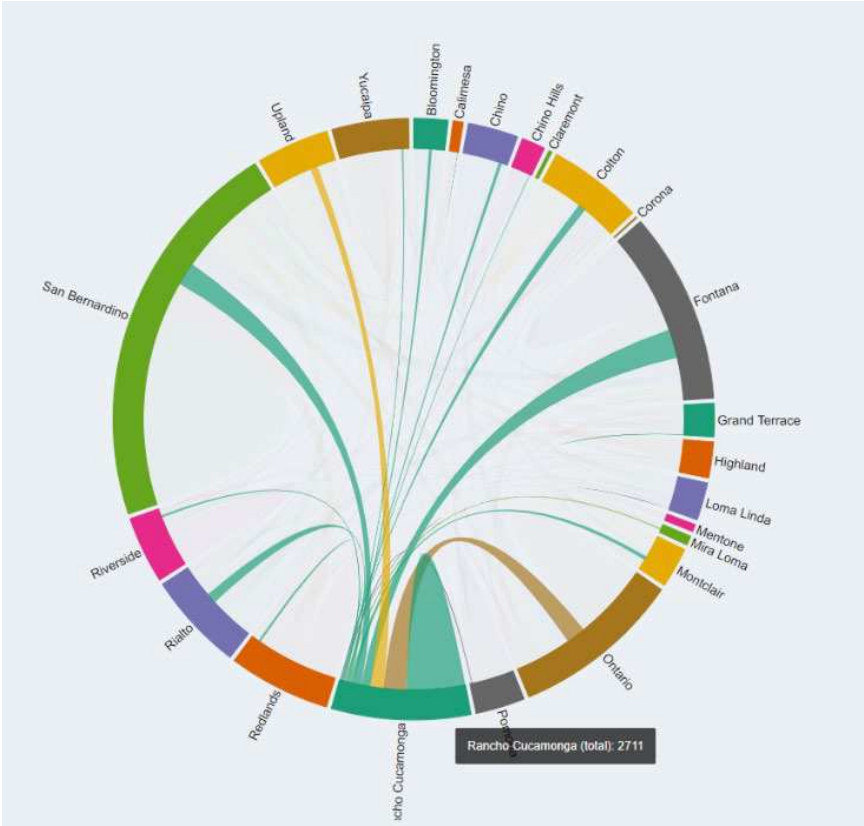
Pomona: Potential Transit



Rancho Cucamonga: Existing Transit

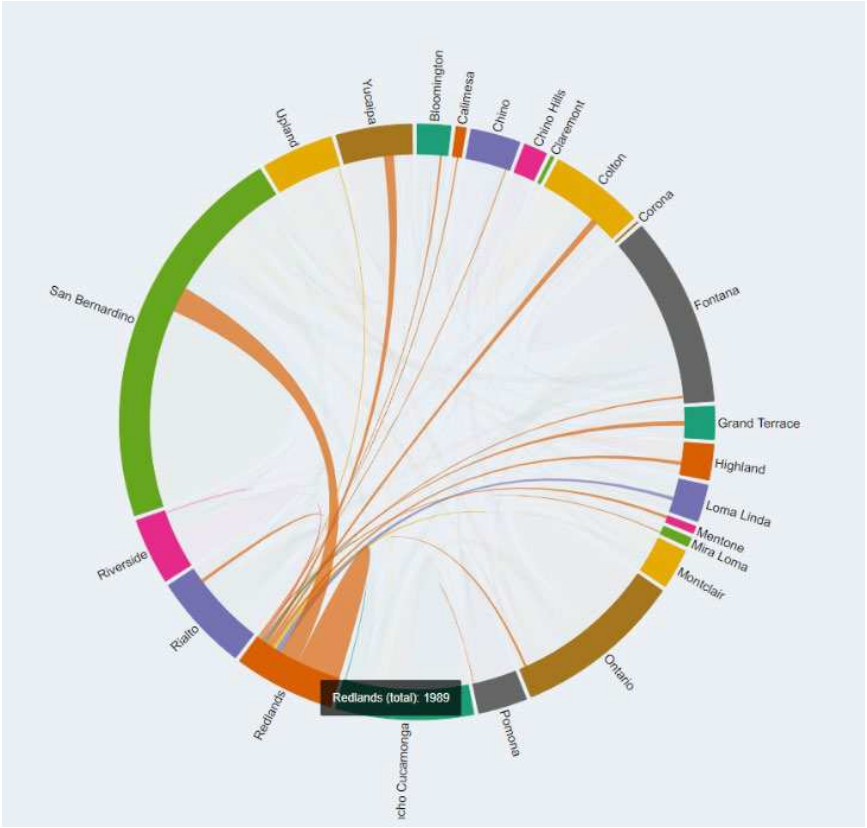


Rancho Cucamonga: Potential Transit

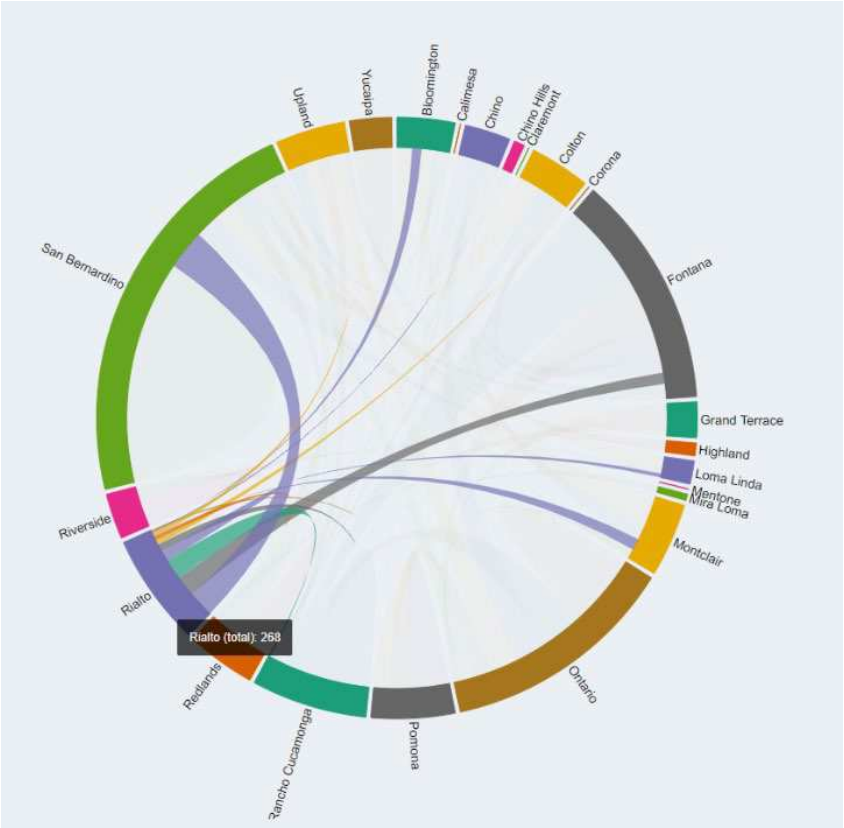


Redlands: Existing Transit

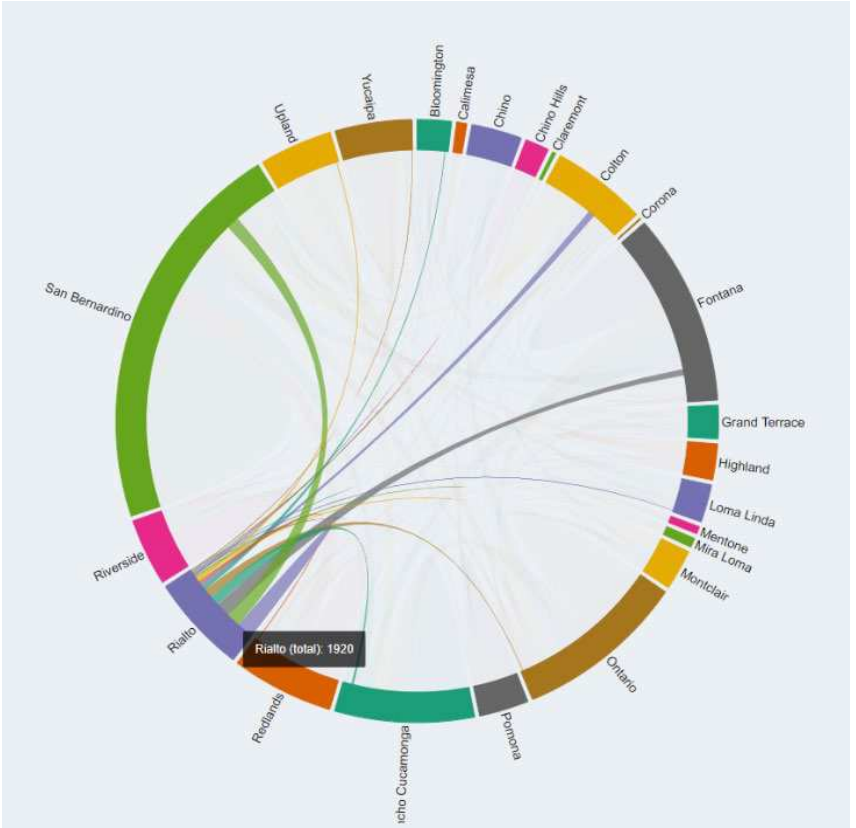
Redlands: Potential Transit



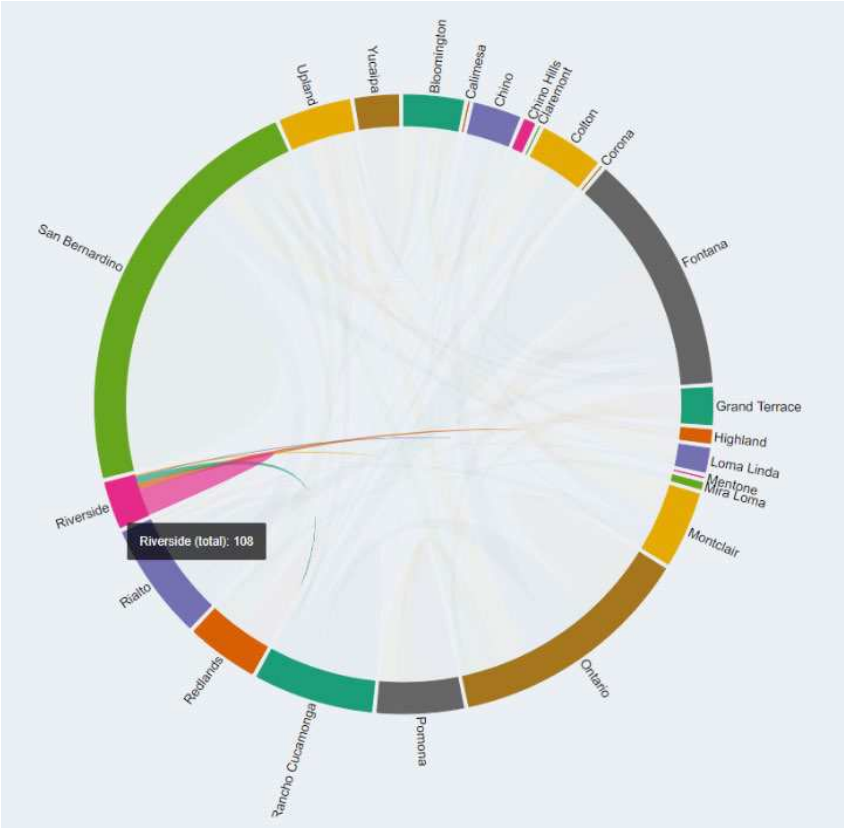
Rialto: Existing Transit



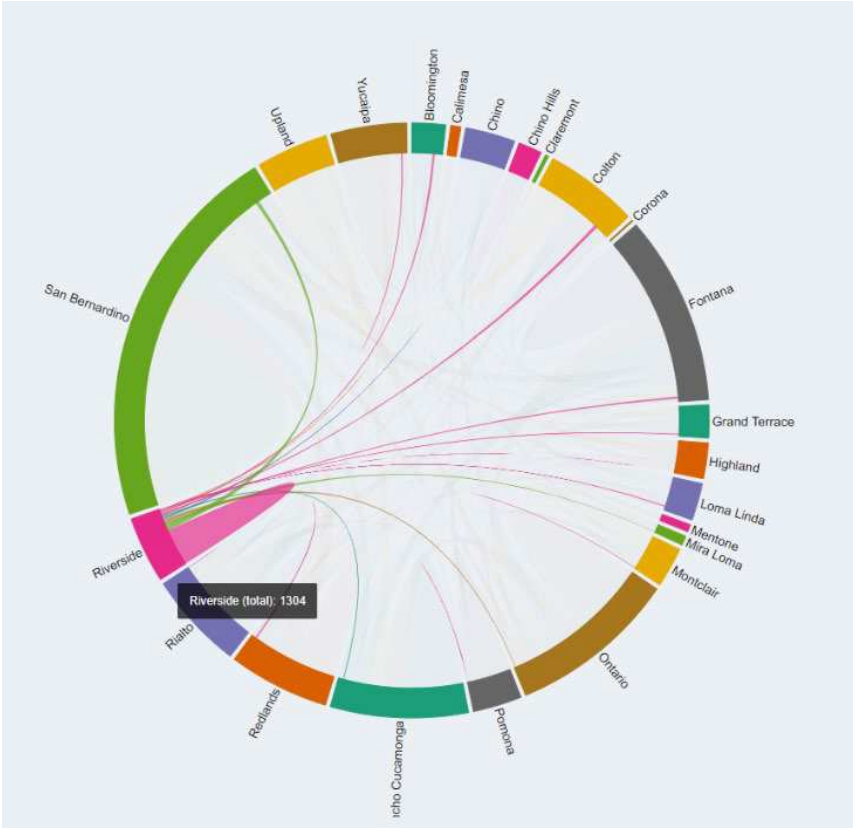
Rialto: Potential Transit



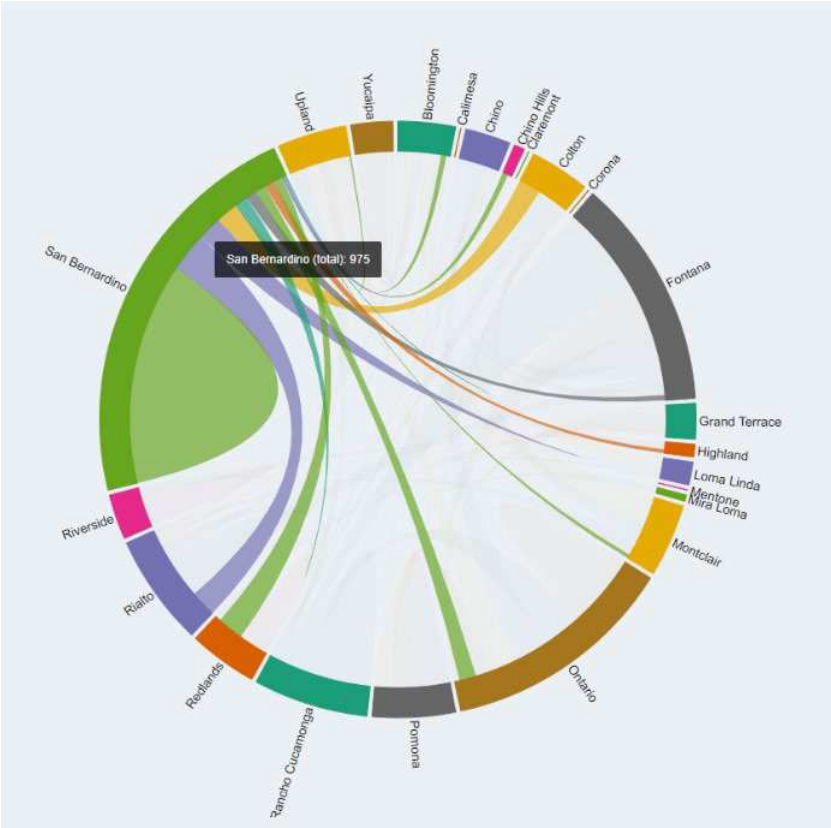
Riverside: Existing Transit



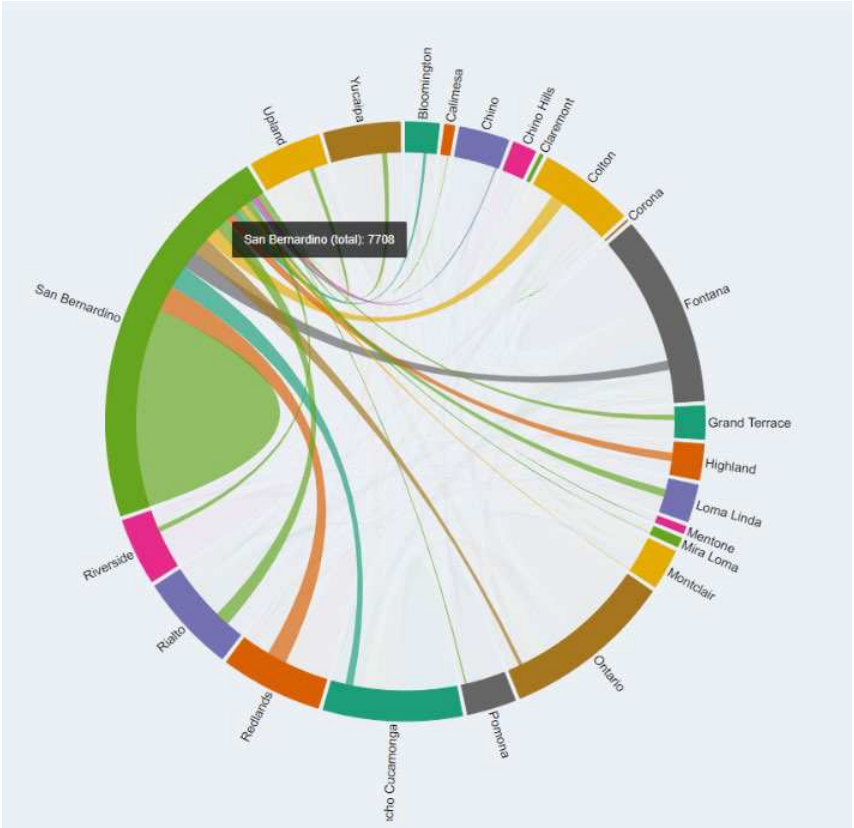
Riverside: Potential Transit



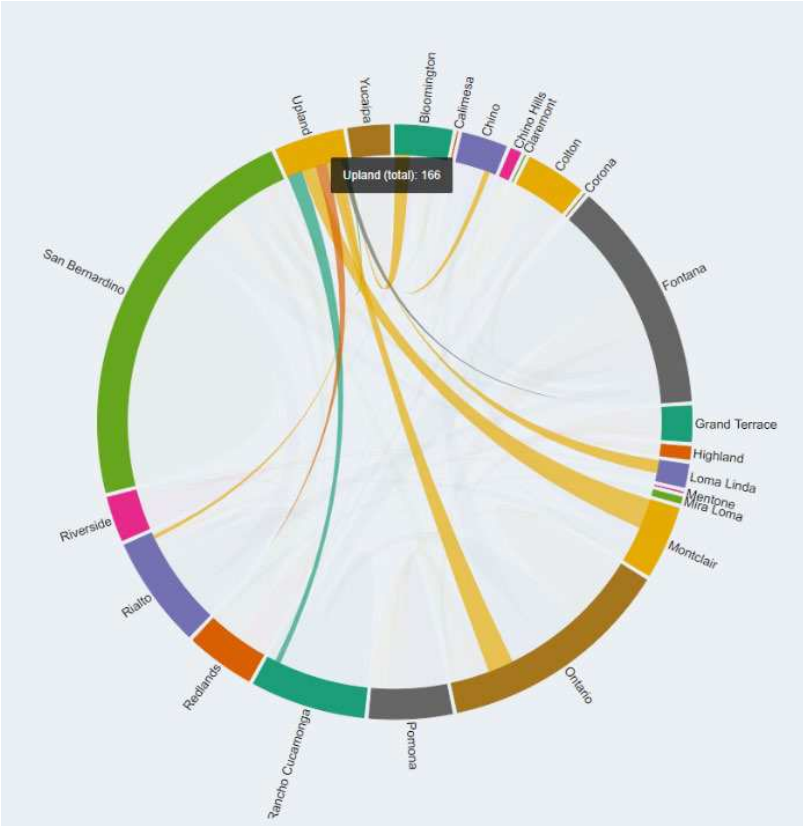
San Bernardino: Existing Transit



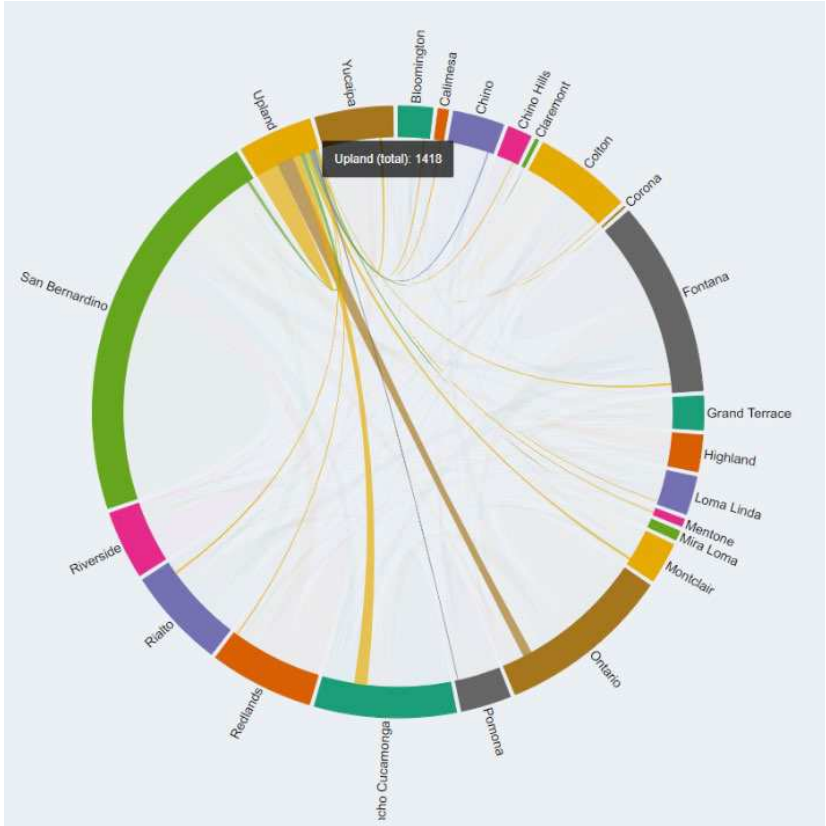
San Bernardino: Potential Transit



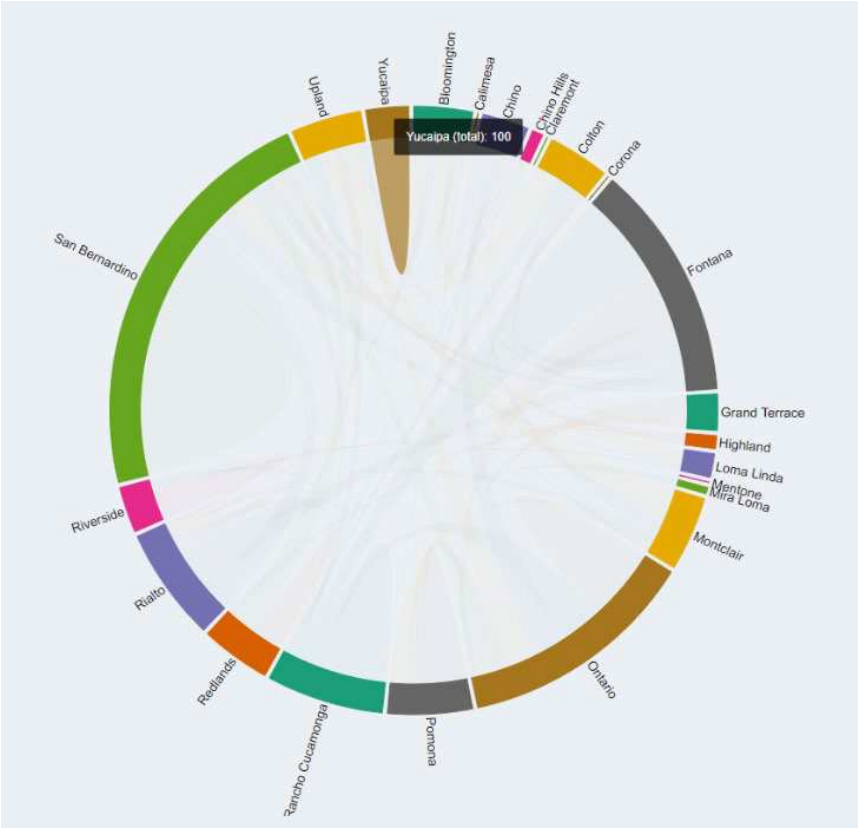
Upland: Existing Transit



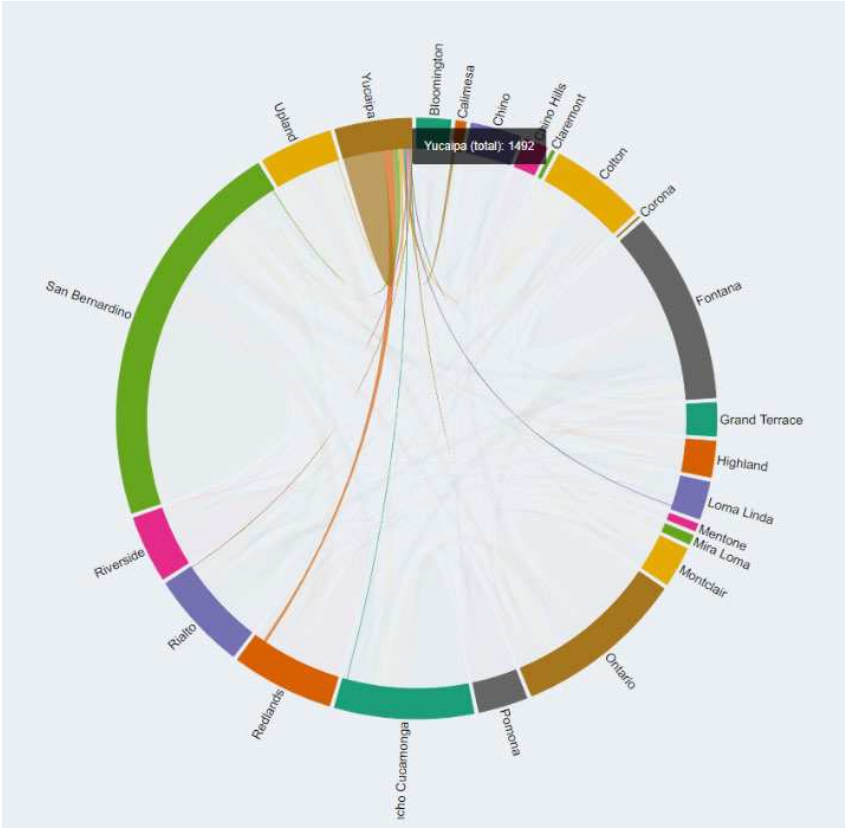
Upland: Potential Transit



Yucaipa: Existing Transit



Yucaipa: Potential Transit



Item #: E4

DATE: October 21, 2020

TO: Committee Chair Penny Lilburn and Members of the Plans and Programs Committee

THROUGH: Erin Rogers, CEO/General Manager

FROM: Jeremiah Bryant, Director of Strategic Development

SUBJECT: **ABBG Customer Satisfaction Survey of Omnitrans**

Form Motion

Receive and forward to the Board of Directors a presentation highlighting the results of the American Bus Benchmarking Group (ABBG) Customer Satisfaction Survey of Omnitrans.

Background

Omnitrans belongs to the American Bus Benchmarking Group (ABBG), which is a data and best practices sharing benchmarking network of twenty-one mid-sized bus operators in the U.S. ABBG is facilitated by the Railway and Transport Strategy Centre at Imperial College London.

A key component of the annual work plan for the ABBG is a joint Customer Satisfaction Survey, which has been completed each year since 2014. This year, thirteen agencies participated in the survey which was conducted online via SurveyMonkey® during March and April of 2020. Survey response rate and responses were likely impacted by the early stages of the COVID-19 pandemic. In addition to items directly related to COVID, Omnitrans reduced service by approximately 45% during the survey period.

Omnitrans riders contributed 482 responses to the survey out of 8,993 total responses for all ABBG members. After a scrubbing process, Omnitrans' rider clean responses totaled 421. Since this survey was completed online and not truly from a random sample, and hence subject to a sampling bias, a true error margin and confidence level cannot be established.

Omnitrans received an 81.0% overall satisfaction rating. The average satisfaction rating for ABBG members who participated in the survey in 2020 is 80.6%. This is the 6th year over 80%.

The survey has 20 questions in nine satisfaction areas. Omnitrans scored higher than peers on 13 of the 20 questions. Additionally, Omnitrans saw increases in thirteen

satisfaction questions compared to our own score a year ago. Details on each question can be seen in Attachments A and B to this report, with further break down in the attached presentation.

The ABBG-facilitated Customer Satisfaction Survey is one tool that Omnitrans utilizes to gather customer feedback.

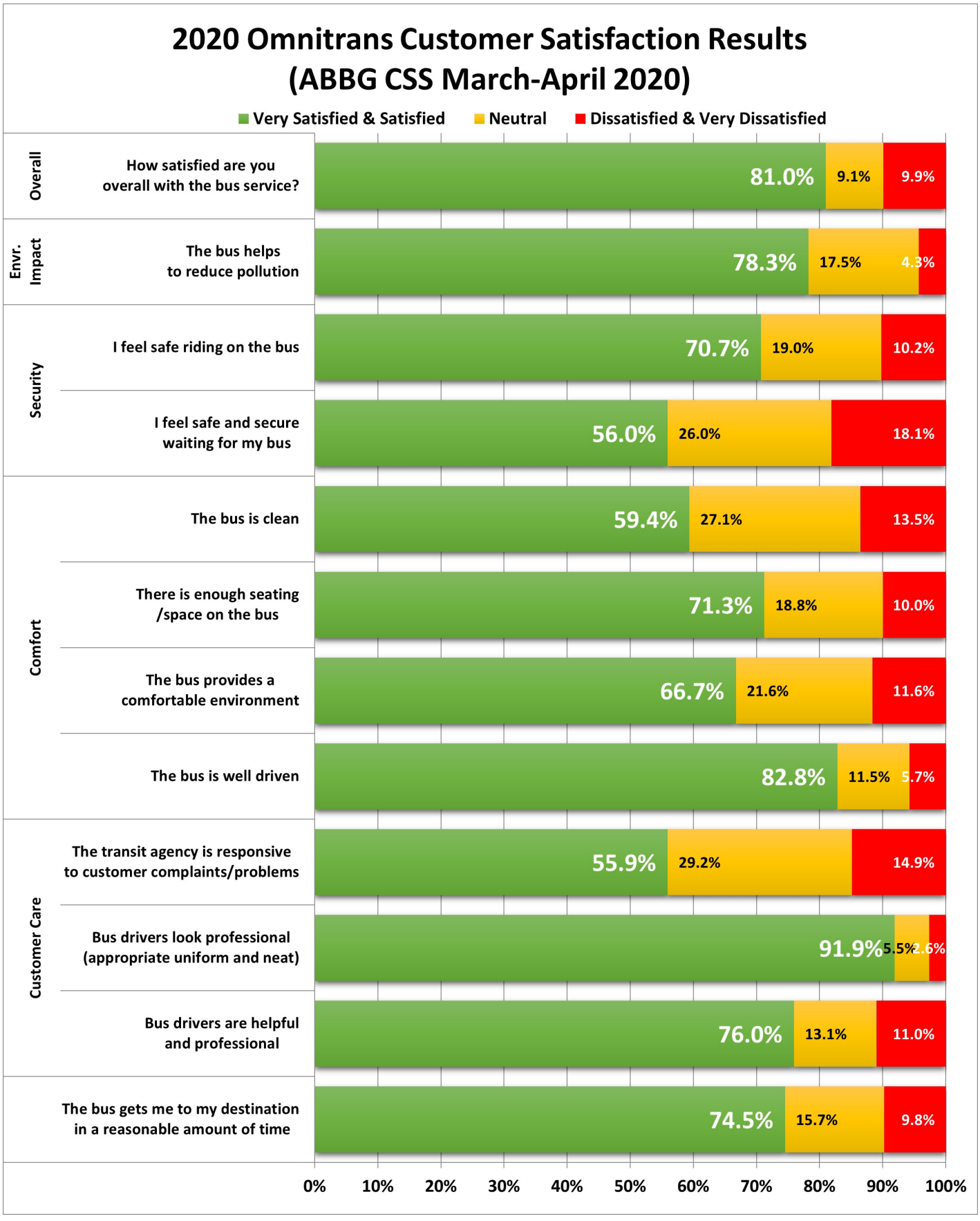
Conclusion

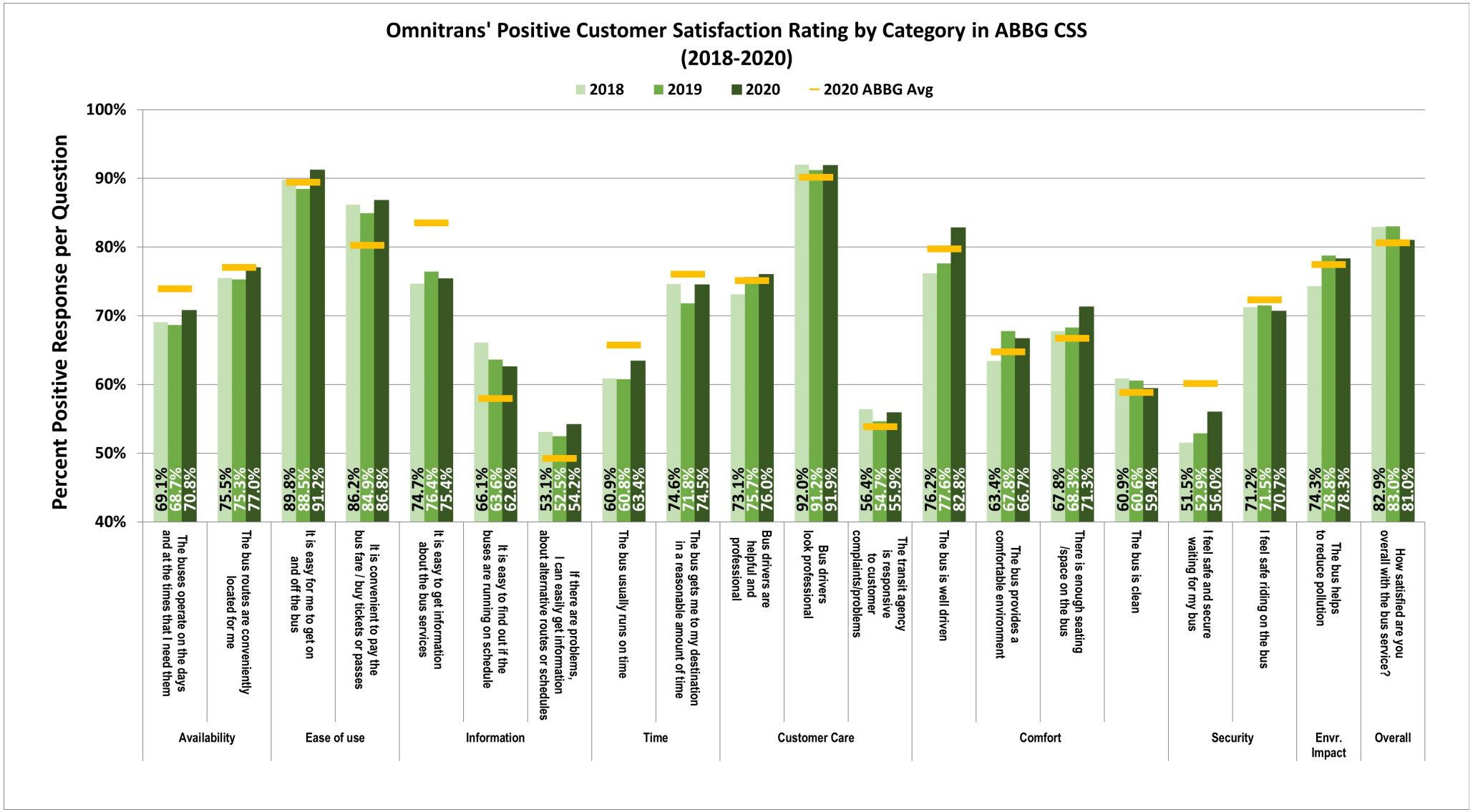
Receive and forward this staff report and presentation on the ABBG Customer Satisfaction Survey of Omnitrans.

ER:JB:VC

Attachments

A. 2020 Omnitrans Customer Satisfaction Results
B. Omnitrans' Positive Customer Satisfaction Rating by Category
C. PowerPoint Presentation

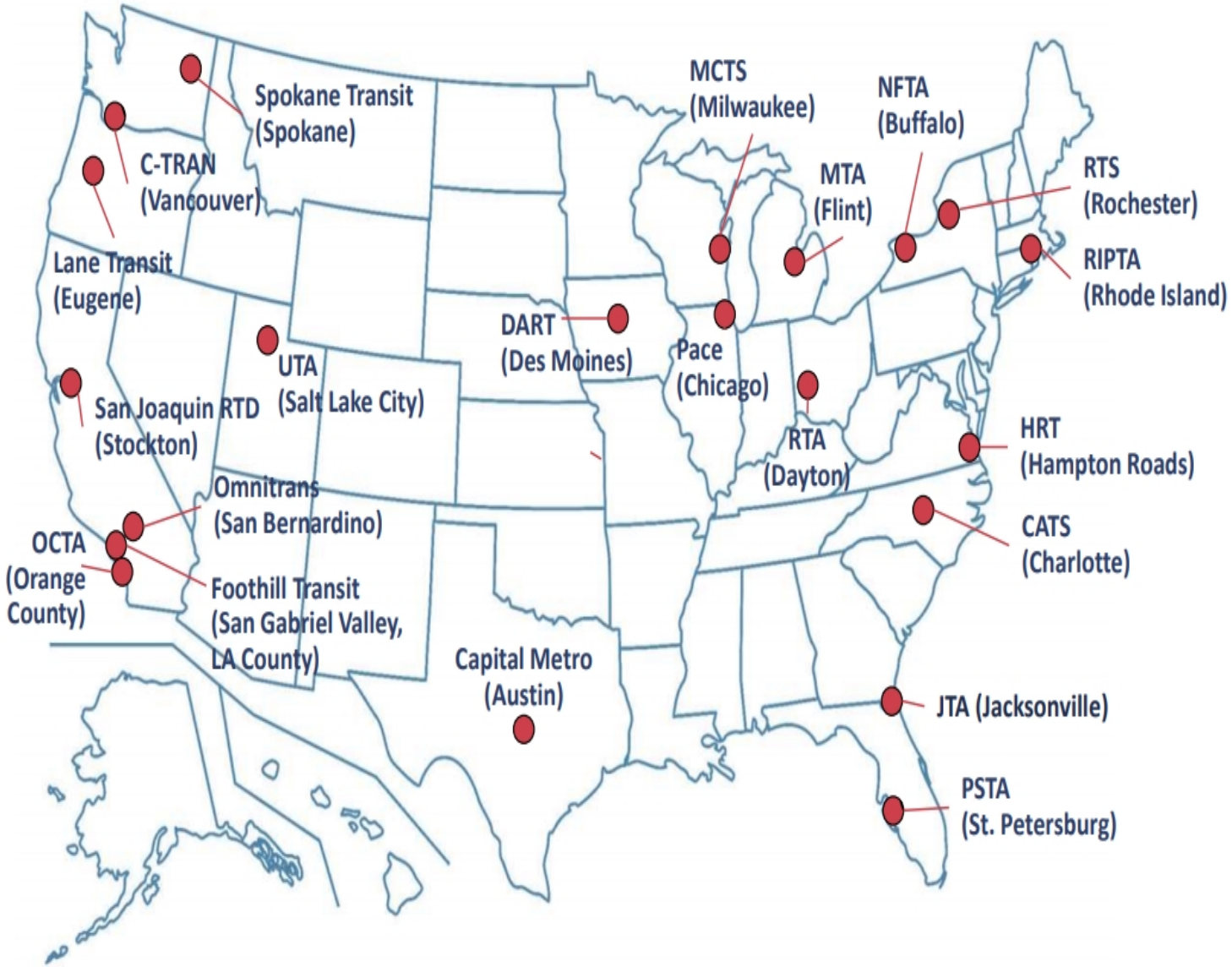

2020 Omnitrans Customer Satisfaction Results
(ABBG CSS March-April 2020)
Very Satisfied & Satisfied
Neutral
Dissatisfied & Very Dissatisfied
Overall
How satisfied are you overall with the bus service?
81.0%
9.1%
9.9%
Envr. Impact
The bus helps to reduce pollution
78.3%
17.5%
4.3%
Security
I feel safe riding on the bus
70.7%
19.0%
10.2%
I feel safe and secure waiting for my bus
56.0%
26.0%
18.1%
Comfort
The bus is clean
59.4%
27.1%
13.5%
There is enough seating /space on the bus
71.3%
18.8%
10.0%
The bus provides a comfortable environment
66.7%
21.6%
11.6%
The bus is well driven
82.8%
11.5%
5.7%
Customer Care
The transit agency is responsive to customer complaints/problems
55.9%
29.2%
14.9%
Bus drivers look professional (appropriate uniform and neat)
91.9%
5.5%
2.6%
Bus drivers are helpful and professional
76.0%
13.1%
11.0%
The bus gets me to my destination in a reasonable amount of time
74.5%
15.7%
9.8%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%


Omnitrans' Positive Customer Satisfaction Rating by Category in ABBG CSS (2018-2020)
2018
2019
2020
2020 ABBG Avg
Percent Positive Response per Question
100%
90%
80%
70%
60%
50%
40%
69.1% 68.7% 70.8%
75.5% 75.3% 77.0%
89.8% 88.5% 91.2%
86.2% 84.9% 86.8%
74.7% 76.4% 75.4%
66.1% 63.6% 62.6%
53.1% 52.5% 54.2%
60.9% 60.8% 63.4%
74.6% 71.8% 74.5%
73.1% 75.7% 76.0%
92.0% 91.2% 91.9%
56.4% 54.7% 55.9%
76.2% 77.6% 82.8%
63.4% 67.8% 66.7%
67.8% 68.3% 71.3%
60.9% 60.6% 59.4%
51.5% 52.9% 56.0%
71.2% 71.5% 70.7%
74.3% 78.8% 78.3%
82.9% 83.0% 81.0%
The buses operate on the days and at the times that I need them
The bus routes are conveniently located for me
It is easy for me to get on and off the bus
It is convenient to pay the bus fare / buy tickets or passes
It is easy to get information about the bus services
It is easy to find out if the buses are running on schedule
If there are problems, I can easily get information about alternative routes or schedules
The bus usually runs on time
The bus gets me to my destination in a reasonable amount of time
Bus drivers are helpful and professional
Bus drivers look professional
The transit agency is responsive to customer complaints/problems
The bus is well driven
The bus provides a comfortable environment
There is enough seating /space on the bus
The bus is clean
I feel safe and secure waiting for my bus
I feel safe riding on the bus
The bus helps to reduce pollution
How satisfied are you overall with the bus service?
Availability
Ease of use
Information
Time
Customer Care
Comfort
Security
Envr. Impact
Overall

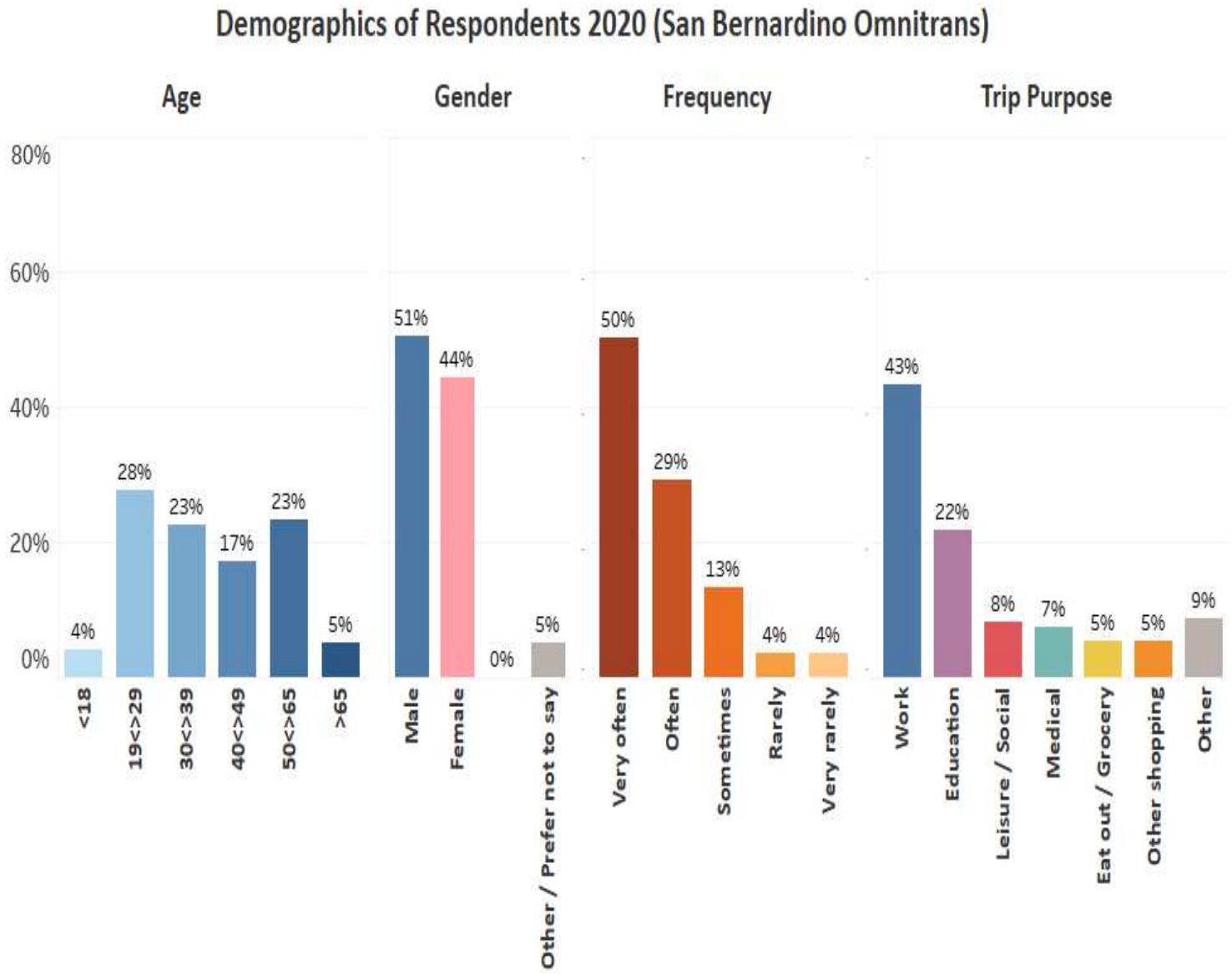
CUSTOMER SATISFACTION SURVEY
AMERICAN BUS BENCHMARKING GROUP (ABBG)

Plans and Program Committee
October 21, 2020

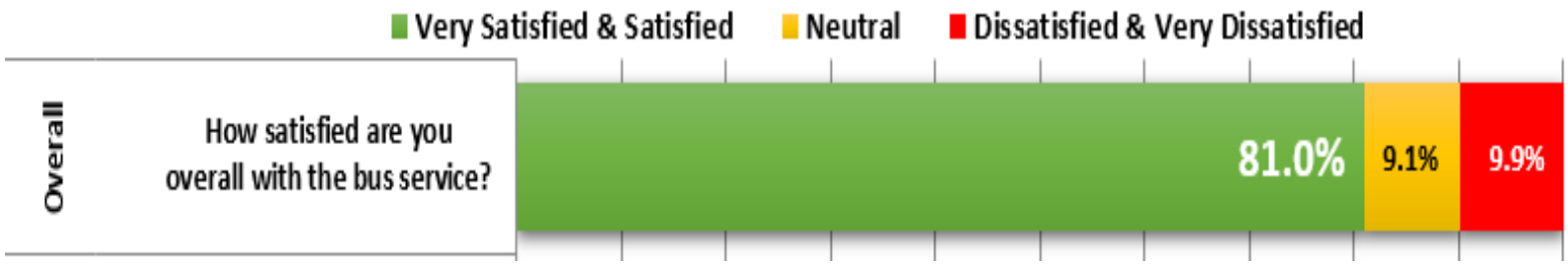
ABBG BENCHMARKING NETWORK



OMNITRANS QUICK DEMOGRAPHICS



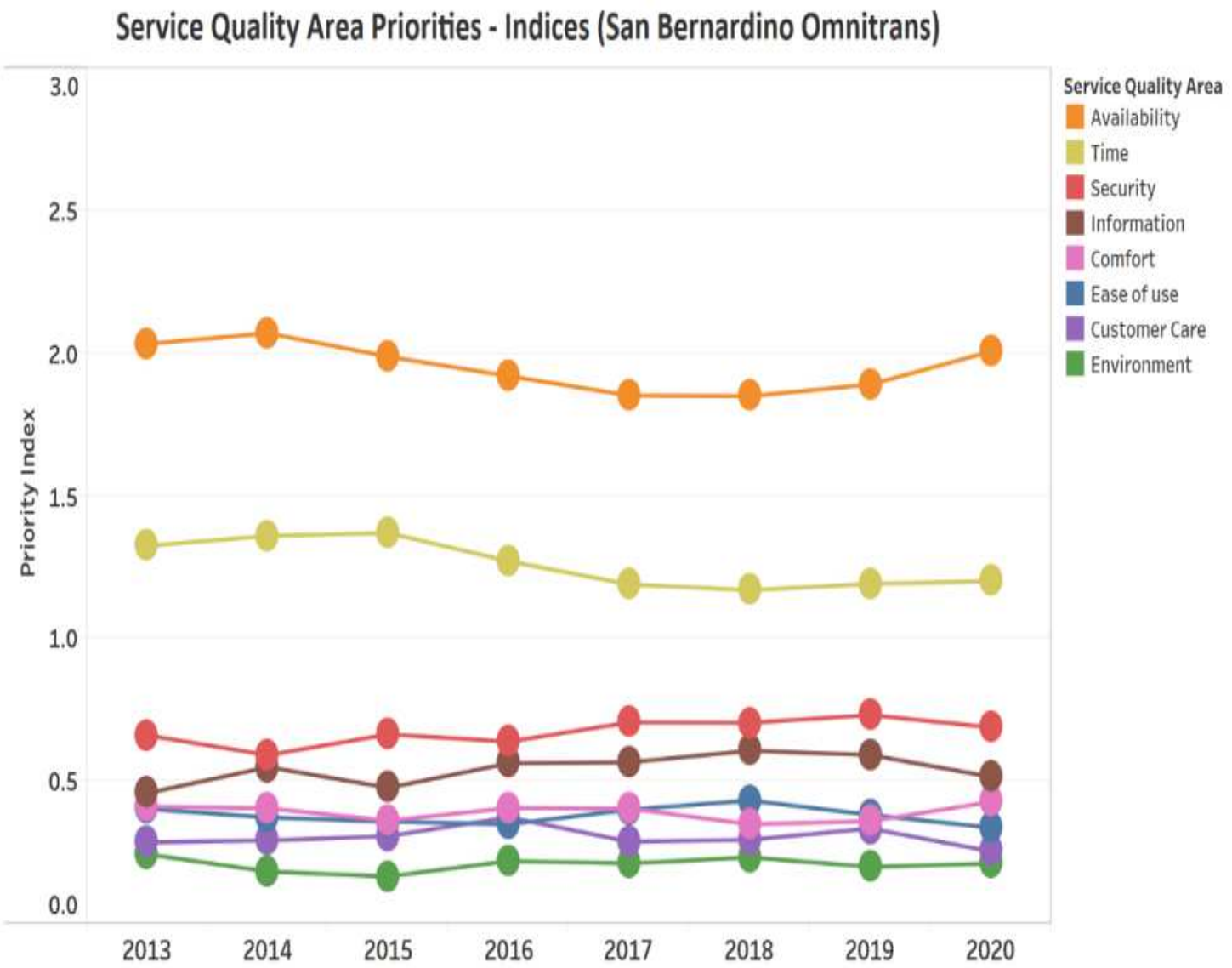
OMNITRANS OVERALL SATISFACTION



81.0% of responding customers gave Omnitrans a Positive Rating.

Avg. Score of 4 out of 5.

CUSTOMER IMPORTANCE RANKINGS



DETAILED SATISFACTION RESULTS

Survey asks 20 questions in 9 Satisfaction Areas

- Score higher than peers in 13 questions

Areas of improved satisfaction vs. 2019:

- Availability of bus services
- Convenient location of bus routes
- Ease of getting on and off the bus
- Convenient to pay the bus fare
- Ease of getting alternative schedule information
- Timeliness of bus service
- Bus drivers are helpful and professional
- Responsiveness to customer complaints
- Bus is well driven
- Enough space on the bus
- Safe and secure while waiting for the bus

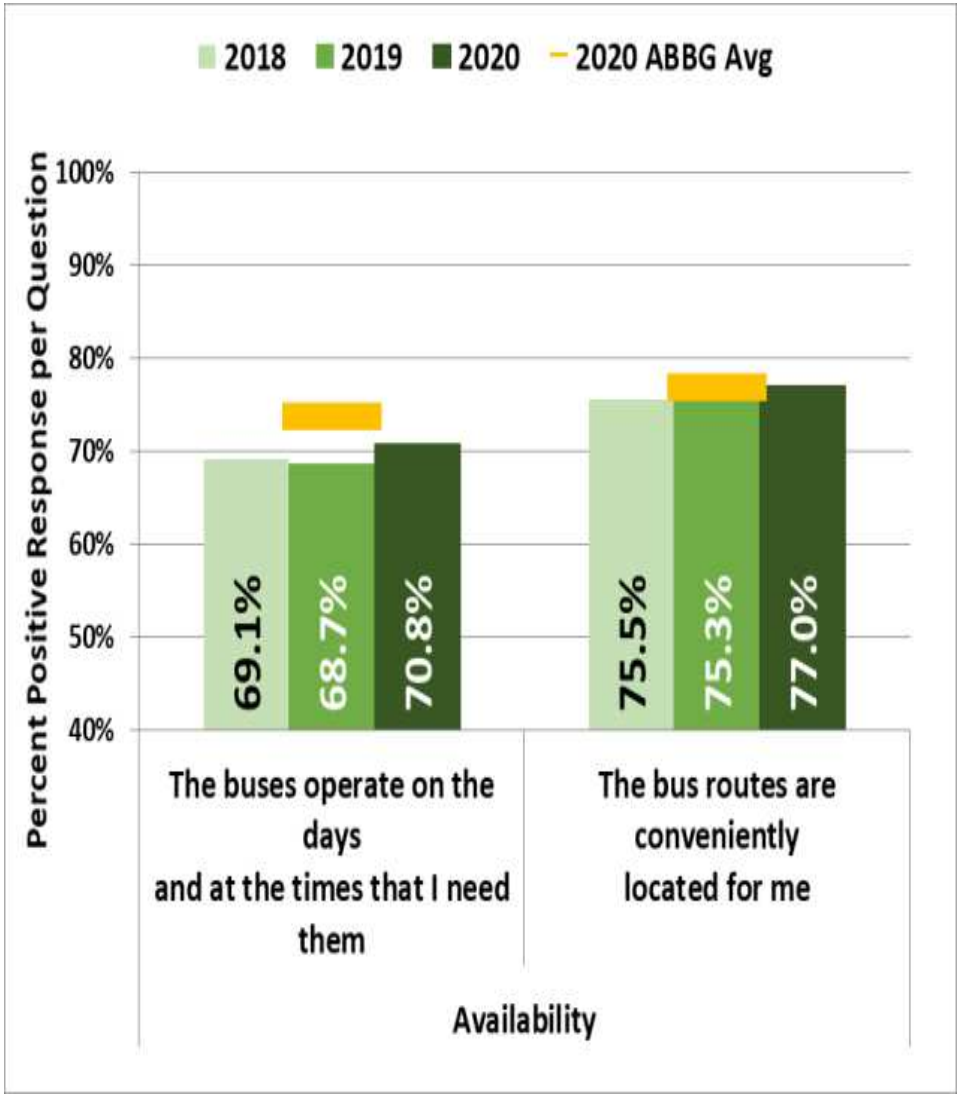
AVAILABILITY OF BUS SERVICE

Days/Time:

- 70.8% agree/strongly agree (positive) that buses operate days and times that they are needed

Conveniently Located:

- 77.0% Positive



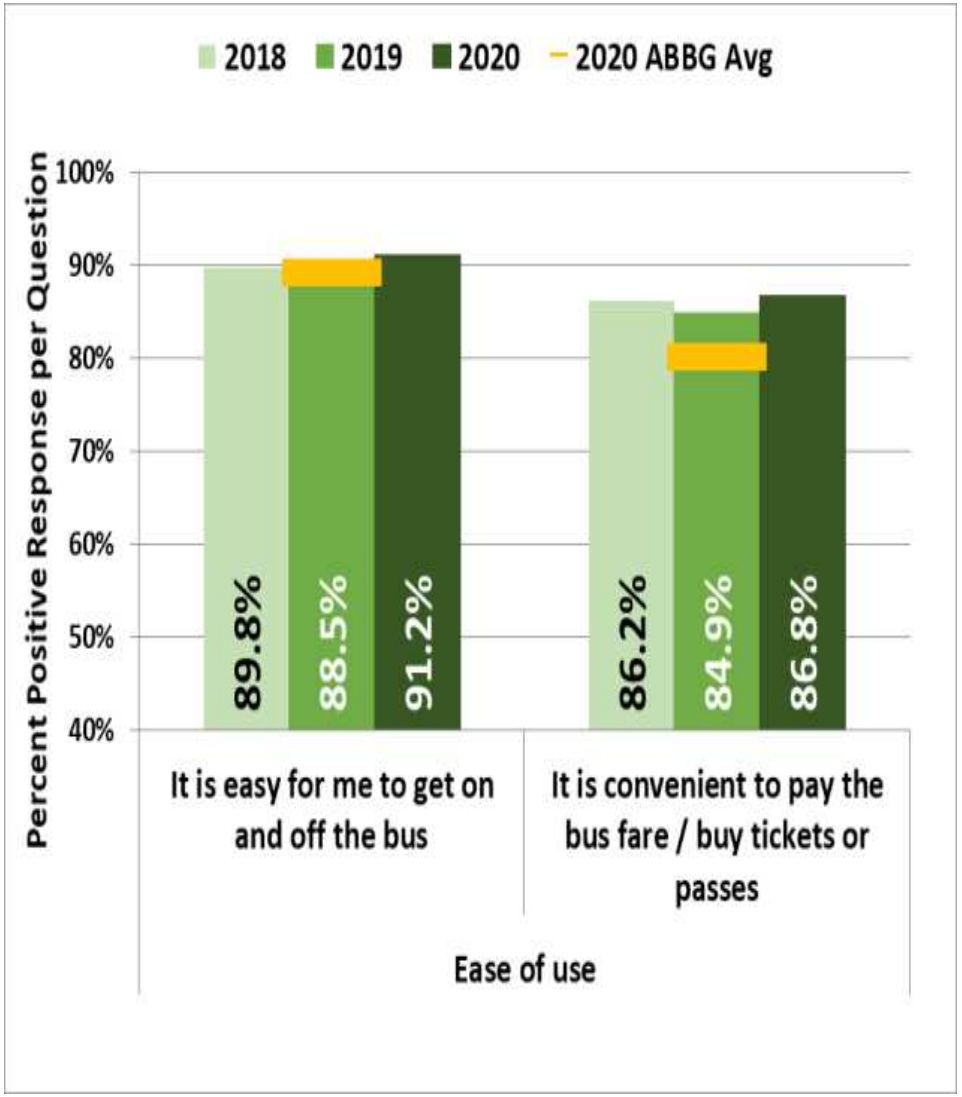
EASE OF USE

Get on/off Bus:

- 91.2% Positive

Ease of Payment:

- 86.8% Positive



INFORMATION

Ease of Acquiring Information

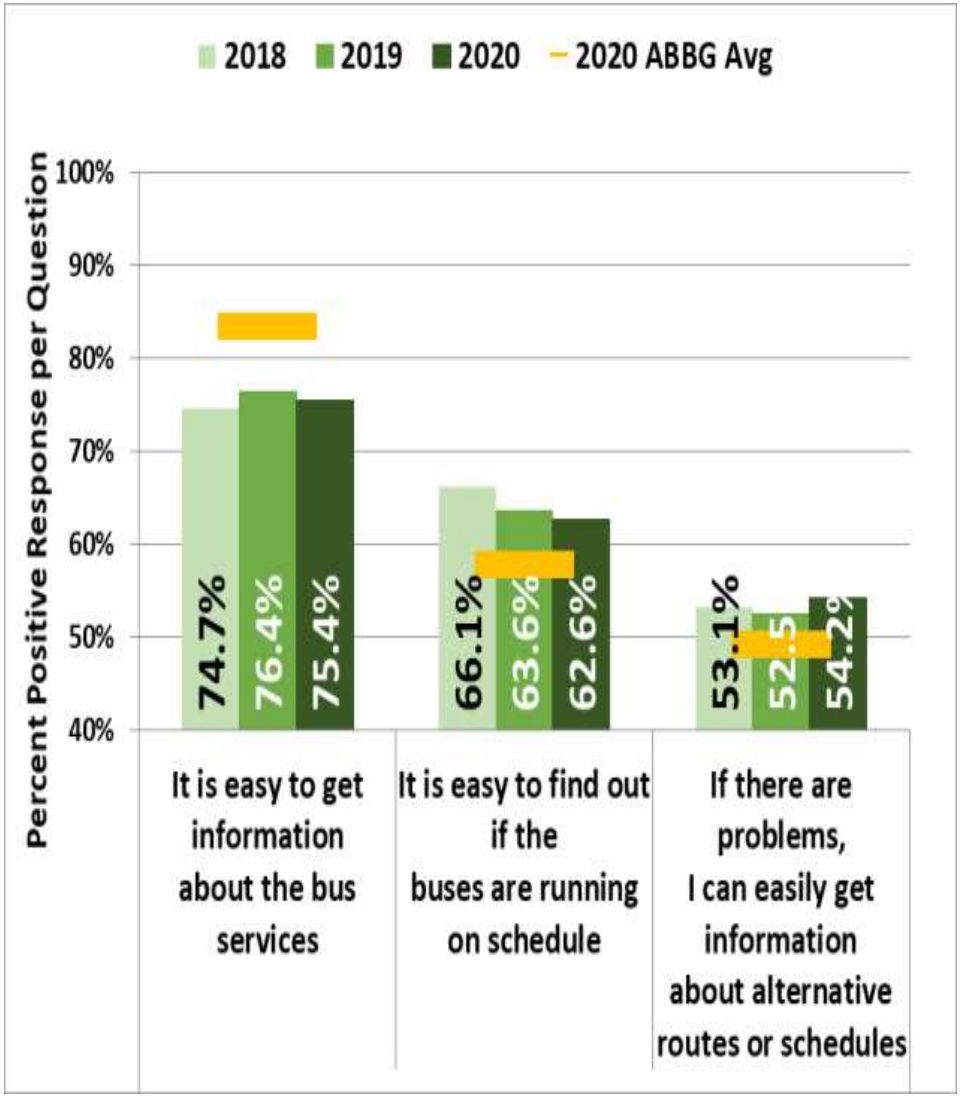
- 75.4% Positive

Easy to find out if buses are on-time:

- 62.6% Positive

If problems, easy to find alternative information:

- 54.2% Positive



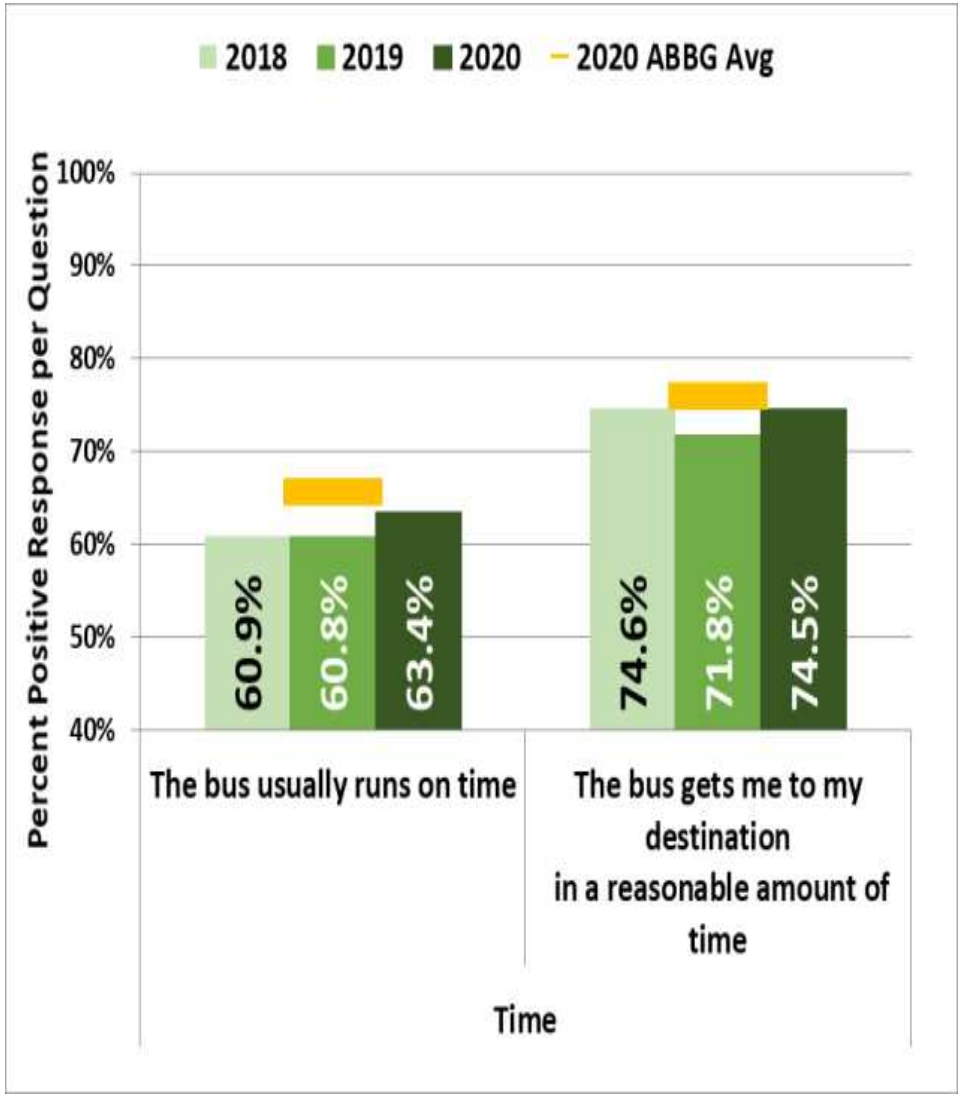
TIMELINESS

Buses Usually Run on Time:

- 63.4% Positive
- Actual OTP: 85%
  - Actual is Higher than Peer Group Average

Reasonable Travel Time:

- 74.5% Positive



CUSTOMER CARE

Drivers Helpful & Professional:

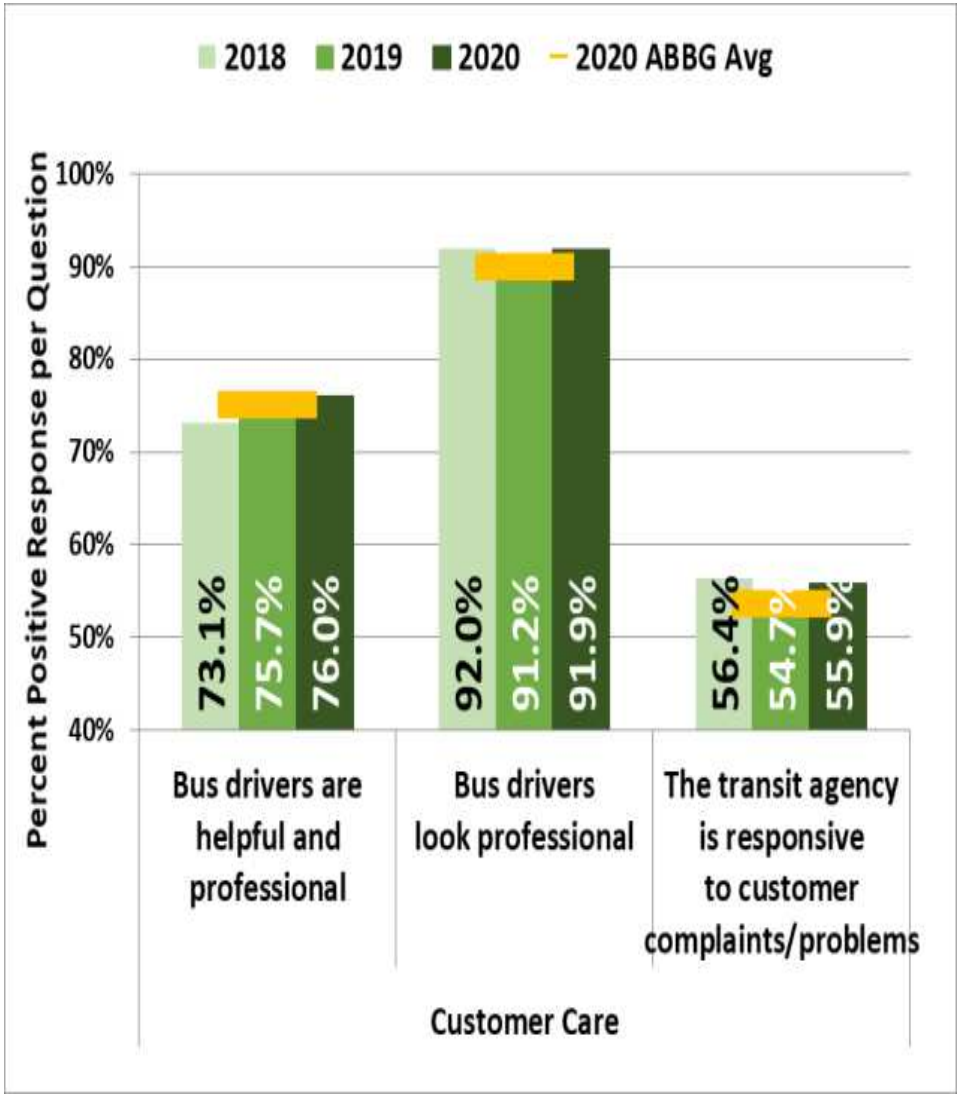
- 76.0% Positive

Drivers Look Professional:

- 91.9% Positive

Agency Responsiveness to issues:

- 55.9% positive



COMFORT

Well Driven:

- 82.8% Positive

Comfortable Environment:

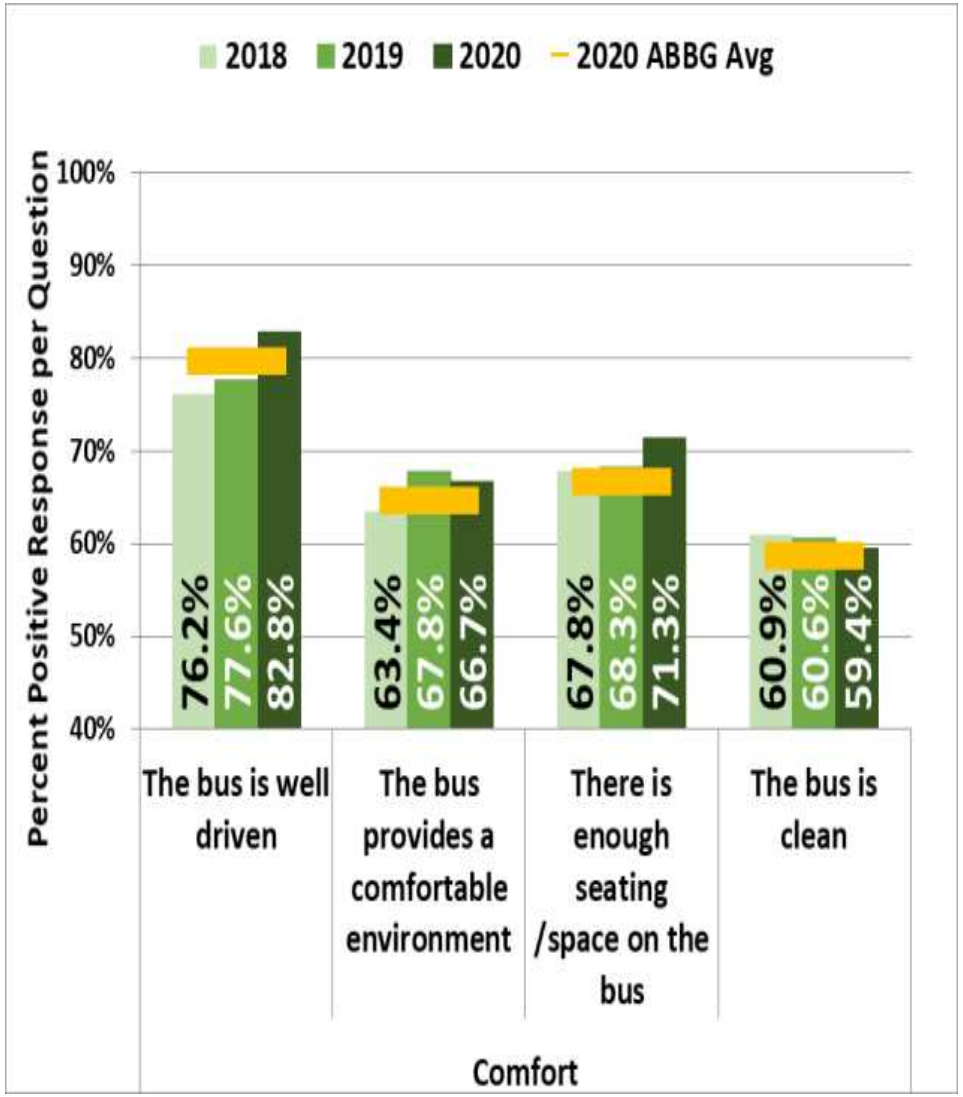
- 66.7% Positive

Seating Availability:

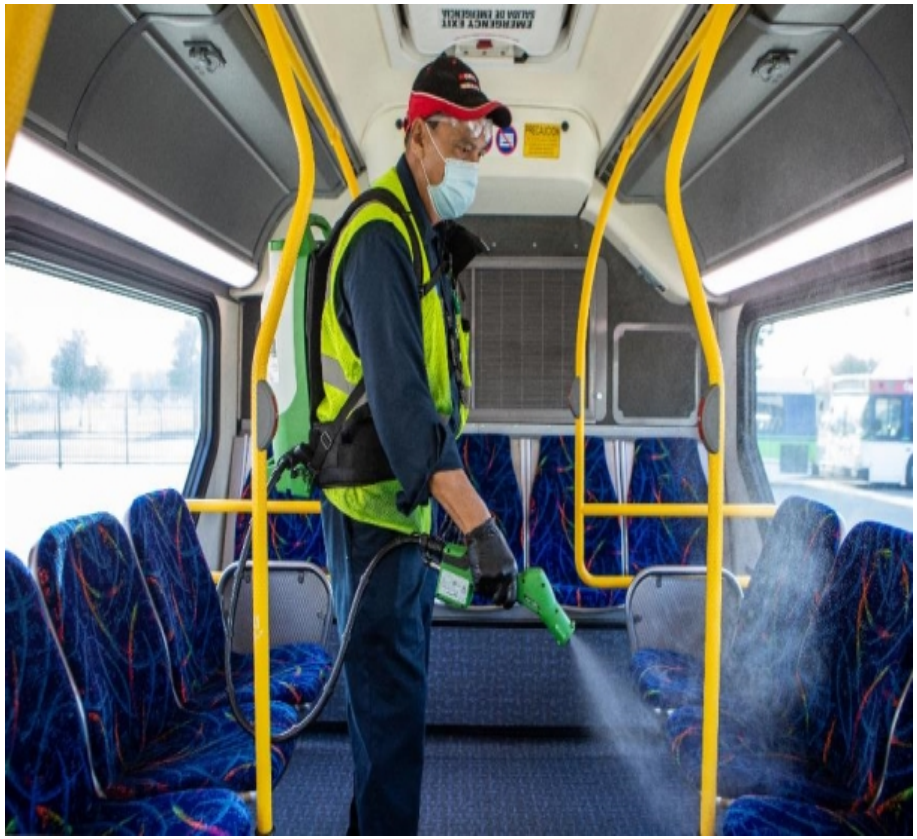
- 71.3% Positive

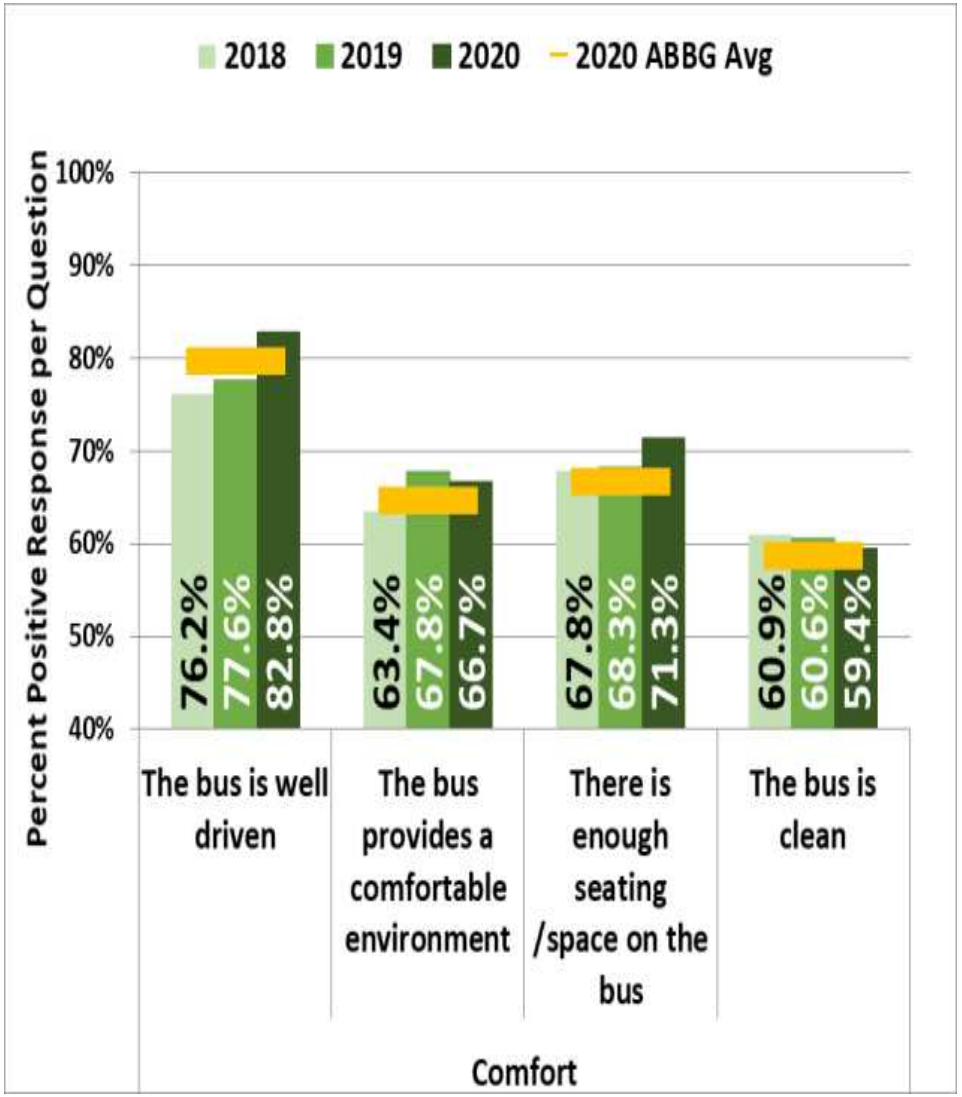
Bus Cleanliness:

- 59.4% Positive



COMFORT




2018
2019
2020
2020 ABBG Avg
Percent Positive Response per Question
100%
90%
80%
70%
60%
50%
40%
76.2%
77.6%
82.8%
63.4%
67.8%
66.7%
67.8%
68.3%
71.3%
60.9%
60.6%
59.4%
The bus is well driven
The bus provides a comfortable environment
There is enough seating /space on the bus
The bus is clean
Comfort

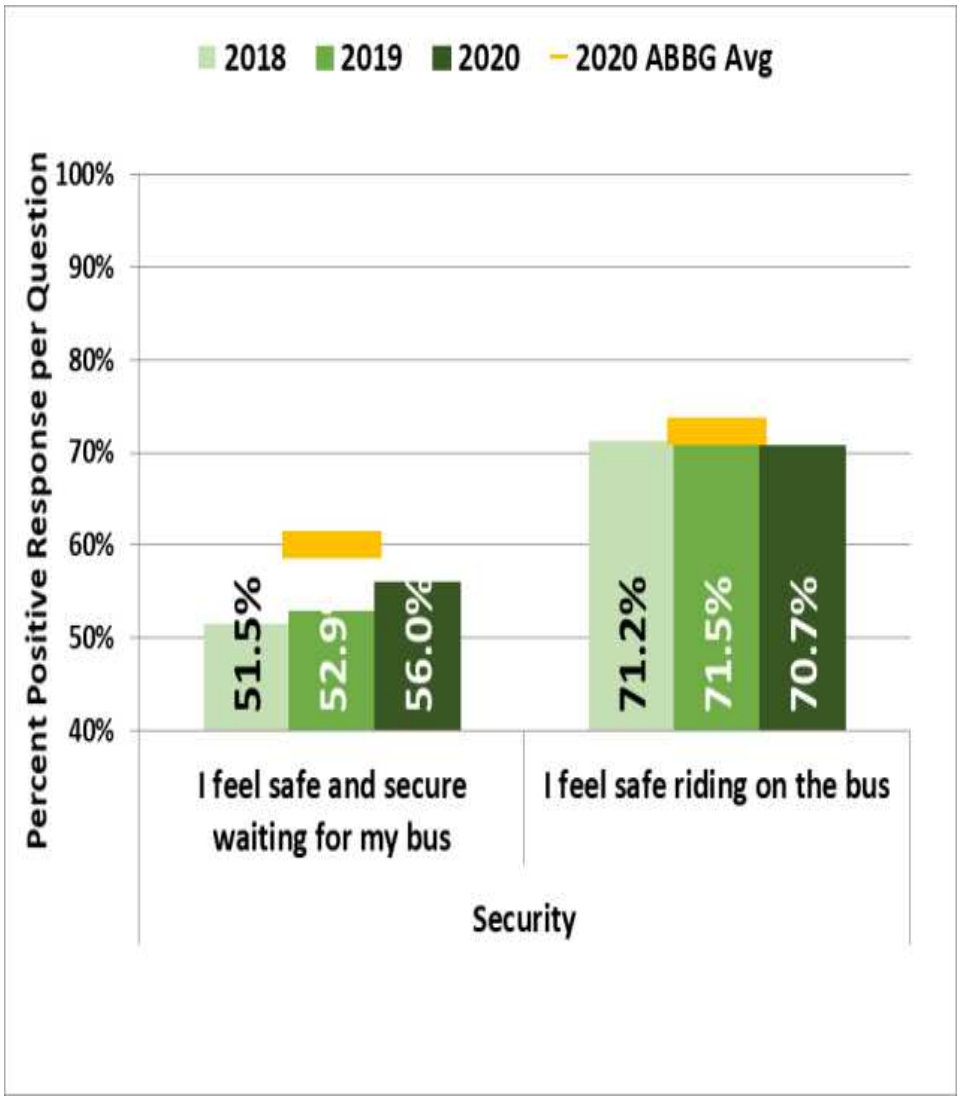
SECURITY

Waiting at Stop:

- 56.0% Positive
- 25.9% Neutral

Riding the Bus:

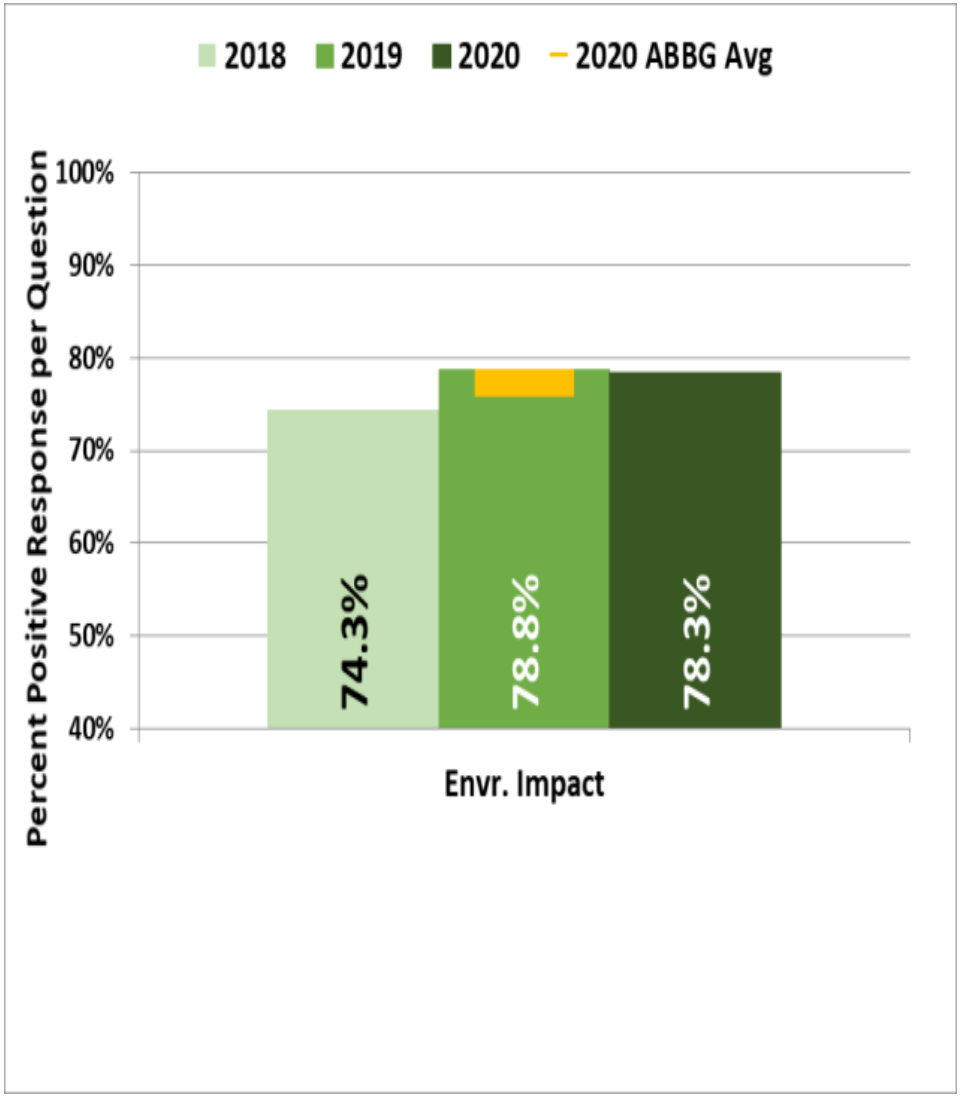
- 70.7% Positive
- 19.0% Neutral



ENVIRONMENTAL IMPACT

Helps the environment

- 78.3% Positive
- 17.5% Neutral



CONCLUSIONS

Overall Customer Satisfaction remains high at 81%

Perception of customer safety while waiting for the bus increased by 3.1% from 2019.

Customers continue to state importance of Availability of Service (days of operation & location of bus services)

THANK YOU

Item #: E5

DATE: October 21, 2020

TO: Committee Chair Penny Lilburn and Members of the Plans and Programs Committee

THROUGH: Erin Rogers, CEO/General Manager

FROM: Jeremiah Bryant, Director of Strategic Development

SUBJECT: **Service Resumption Update**

Form Motion

Receive and forward to the Board of Directors this staff report and presentation regarding service resumption update.

Background

Omnitrans adopted the ConnectForward FY2021 Annual Service Plan in May 2020, with the finalization of the plan occurring primarily in March and April 2020 at the onset of the COVID-19 pandemic. As a result, Omnitrans adopted a two-fold plan.

The first element was the long-term plan designed to align service levels with financial forecasts that resulted in network changes equivalent to an 11% service hour reduction. The network changes, including the launch of OmniRide MicroTransit pilot, was implemented in September 2020.

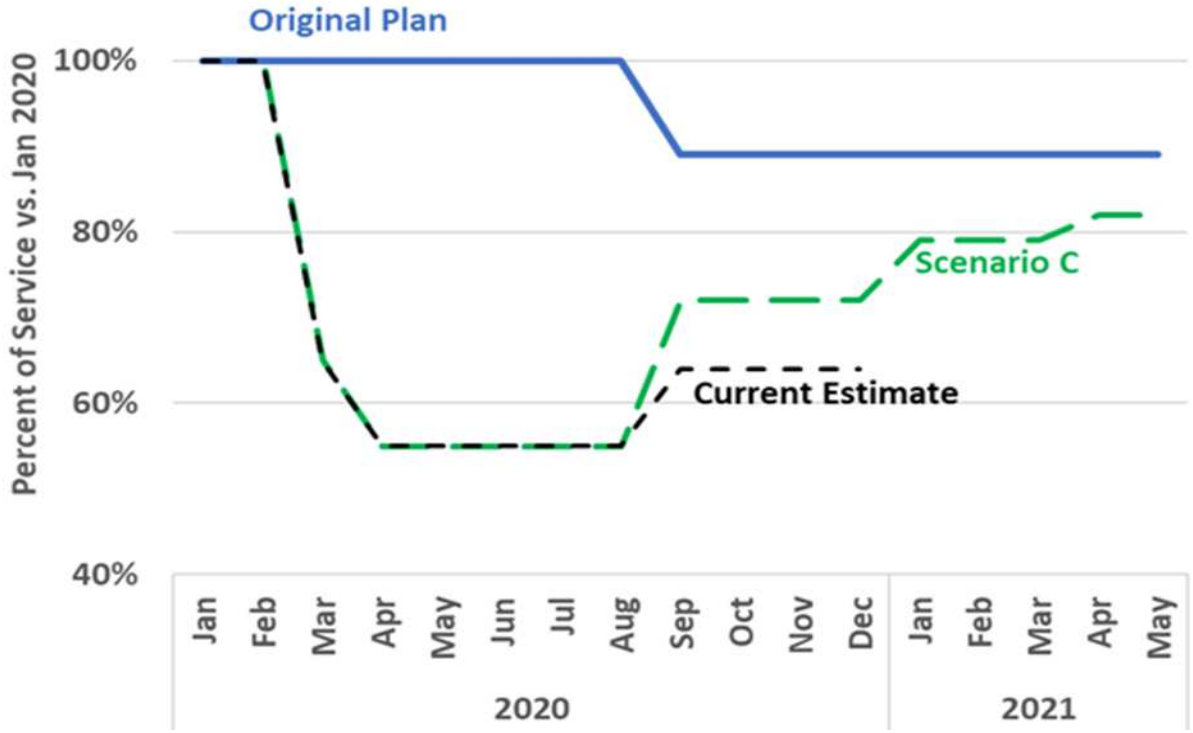
The second element was a rapidly evolving, flexible and scalable plan that can match service levels to the fluid ridership, workforce, funding and economic realities caused by the COVID-19 pandemic. The plan was predicated on a series of four service resumption triggers, shown in Exhibit 1. These were characterized by the Scenario C service resumption path shown in Exhibit 2. While the scalable, triggers-based plan is still appropriate and working, the overall impact and duration of the pandemic has been greater than originally anticipated. As a result, Omnitrans has resumed service at a slower rate than initially proposed in Scenario C due to lower than anticipated ridership. This can be also be seen Exhibit 2. This approach has kept operating costs below budget which will continue to give Omnitrans greater flexibility moving forward especially should the economic impact of the pandemic have longer term consequences.

Exhibit 1: Service Resumption Triggers

Health & Safety Triggers	Ridership/Demand Triggers
Purpose: Determine when to begin fare collection, open front-door, full bus boarding	**Purpose:** Determine when to restore service, routes & frequency…..(System & Route specific)
• Driver PPE readily available/installed • State Stay at Home Order Lifted (Phase 2) • Specific CDC/State/County Transit / Transportation Guidelines	• Colleges & High Schools reopen in-person • Routes routinely exceeding 15 max passengers on board (Load factor >0.4) • 20 for sbX w/ FTA Consultation
Financial Triggers	**Employee Recall Triggers**
Purpose: Determine what services / staffing can be supported	**Purpose:** Determine when to begin to recall operators and mechanics
• Adopt revised budget • CARES Act funding flow • Monthly reports to Administrative & Finance Committee	• Driven by revenue hours and demand in conjunction with other three triggers • Aligning workforces with service levels

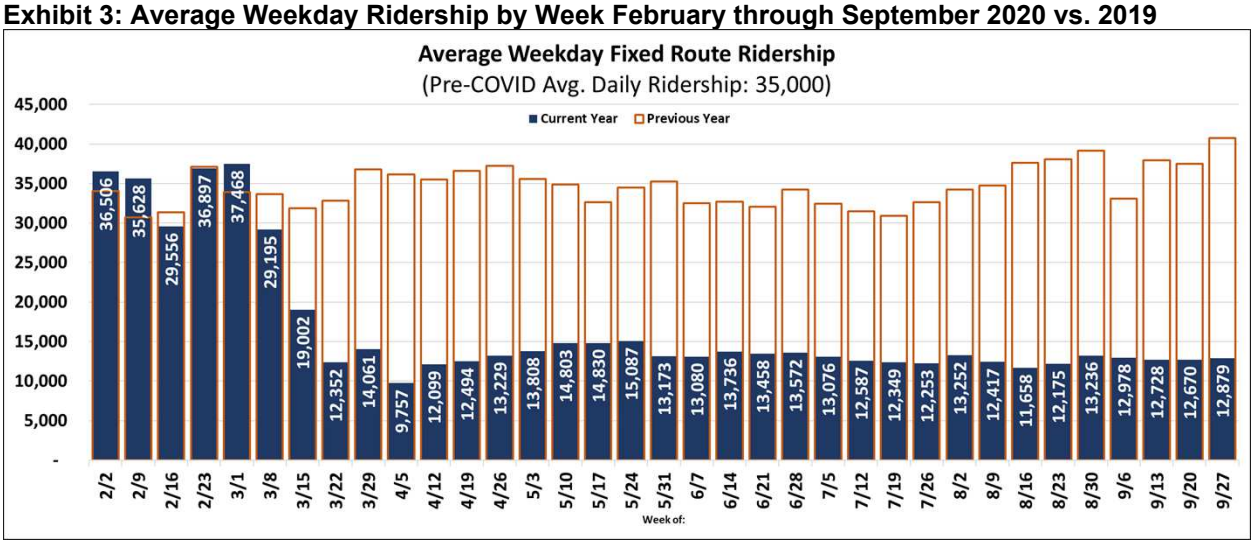
By June 2020, Omnitrans had met the Health & Safety Triggers and Financial Triggers to begin resuming service levels. Based on ridership data, Omnitrans restored a modest level of service on six core routes in September 2020, bringing directly operated fixed route service from approximately 55% of original service levels (45% reduction) to approximately 63% of original service levels (37% reduction). This compares to the Scenario C resumption path that projected that Omnitrans service levels would be at 75% of original levels (25% reduction) by September 2020.

Exhibit 2: Service Resumption Path



Average weekday ridership levels shown in Exhibit 3 demonstrate that weekly ridership has been generally flat since June 2020 fluctuating between approximately 12,000-13,000 average weekday riders. As a result over this period, ridership has been down approximately 60%. However, ridership levels during normal years rise in September and October driven by increases in high school and college student riders. This has not been the case this year as schools and colleges have generally not resumed in person classes.

Exhibit 3: Average Weekday Ridership by Week February through September 2020 vs. 2019



Based on announcements from the California State University System and from local community colleges, it appears that the local colleges will remain in a primarily online mode during the next quarter or semester. Combining that information with the flat ridership levels seen week-over-week and the ability to maintain social distancing on exiting services, Omnitrans currently plans to maintain the current level of service at the January 2021 service change. This would likely keep Omnitrans service levels at 63% of plan through May 2021, unless there were substantive changes to travel patterns.

In addition to monitoring local trends, Omnitrans through involvement with the American Bus Benchmarking Group (ABBG), has tracked ridership, service levels and other pandemic responses of peer agencies. Ridership trends between Omnitrans and ABBG peers can be seen in Exhibit 4. It shows that Omnitrans matched ridership trends of the group between February and June. In June, Omnitrans was the first of the peer agencies who stopped collecting fares to resume fare collection. Omnitrans continued to maintain reduced service levels when other agencies began to increase during the summer. Other agencies decisions to resume service levels were based on local decisions to reopen economic activity and the opening of schools and colleges.

Evaluating service levels of ABBG peers compared to Omnitrans can be seen in Exhibit 5. It shows that Omnitrans acted to reduce service levels faster than most peers. Omnitrans made deeper cuts than most peers and has remained at a lower service level longer than most peers. This has been in response to Omnitrans ridership levels and as a strategic decision to carry forward as much Local Transportation Funds (LTF) and CARES Act funds as possible should the economic impact of the pandemic last longer than the pandemic itself.

Exhibit 4: Seasonally Adjusted Percent Change in Weekday Ridership Compared to February 2020 (Omnitrans and ABBG Members)

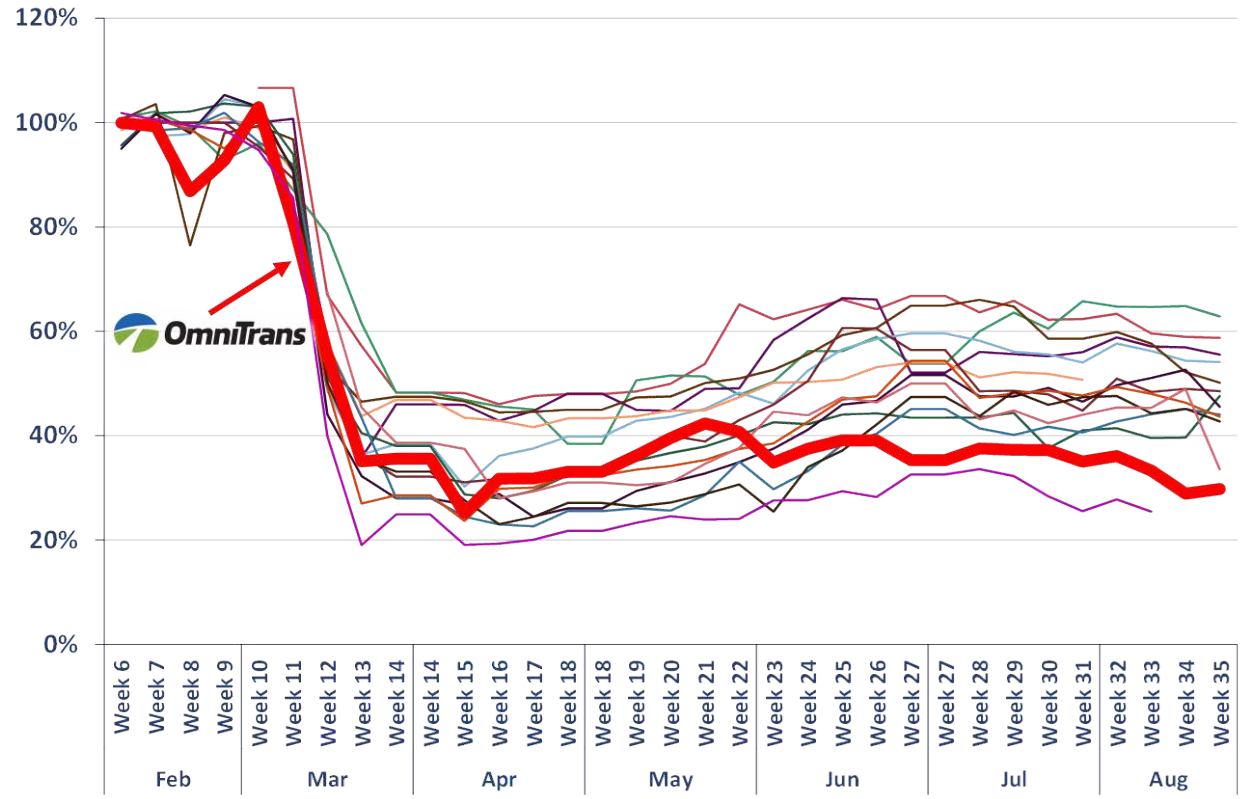
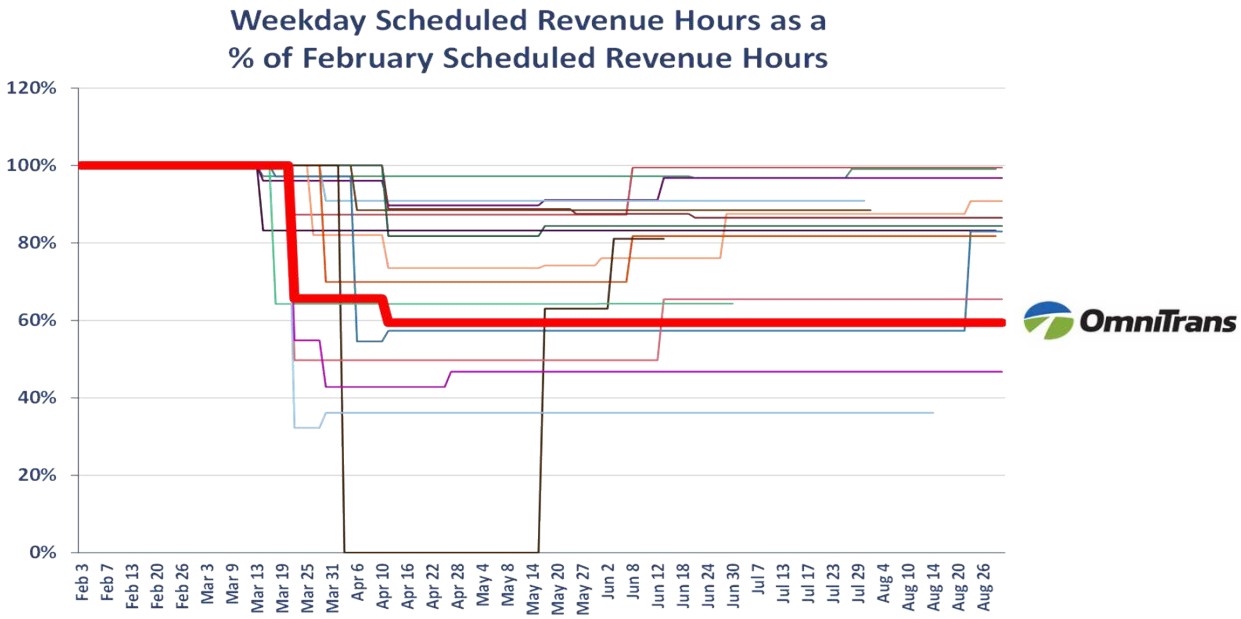


Exhibit 5: Weekday Scheduled Revenue Hours as a percent of February Scheduled Revenue Hours



The data presented above has focused on fixed route bus service. The OmniAccess paratransit service has seen larger declines in activity than fixed route service, which is also consistent with peers. OmniAccess ridership has averaged a year-over-year decline of approximately 85% with current weekday ridership of approximately 200 riders per day compared to pre-COVID weekday ridership of 1,350 riders per day. Omnitrans has negotiated contract amendments with First Transit as a result of these changes.

In addition to monitoring current ridership levels, school reopening, and peer agency actions, Omnitrans is strategically evaluating options should ridership levels remain low through summer 2021 or beyond. These considerations start by looking at service delivery models and evaluating fixed costs on both directly and contracted service as we begin the FY2022 budgeting process.

Omnitrans is also determining if there are other modifications to service delivery methods. During the September 2020 service changes, Omnitrans implemented additional contracting of service using smaller vehicles. Omnitrans is considering expanding this to other low performing routes, low performing weekend service, or potentially low performing early morning or evening service. Omnitrans has had discussions with MicroTransit technology provider RideCo about the ability to implement temporary MicroTransit zones where fixed route service is temporarily low. Omnitrans is also in the process of reaching out to OmniAccess riders to determine if there are additional needs within the disabled community that Omnitrans can serve.

While Omnitrans has not made any specific proposal at this time, the Agency is developing plans to further modify service should the low ridership levels persist into and beyond Summer 2021.

Conclusion

Receiving and forwarding this staff report provides for a transparent discussion of the COVID-19 pandemics impact on Omnitrans service levels and ridership.

ER:JB

Attachments

A. PowerPoint Presentation

SERVICE RESUMPTION UPDATE

Plans & Programs Committee
October 21, 2020

BACKGROUND

Two-part Service Plan Adopted in May 2020

1. ConnectForward 11% reduction

2. Flexible & Scalable Plan to align service level ridership, workforce, funding changes due to COVID-19 pandemic

OmniTrans

SERVICE RESUMPTION TRIGGERS

Health & Safety Triggers

Purpose: Determine when to begin fare collection, open front-door, full bus boarding

- Driver PPE readily available/installed
- State Stay at Home Order Lifted (Phase 2)
- Specific CDC/State/County Transit / Transportation Guidelines

Ridership/Demand Triggers

Purpose: Determine when to restore service, routes & frequency…..(System & Route specific)

- Colleges & High Schools reopen in-person
- Routes routinely exceeding 15 max passengers on board (Load factor >0.4)
  - 20 for sbX w/ FTA Consultation

Financial Triggers

Purpose: Determine what services / staffing can be supported

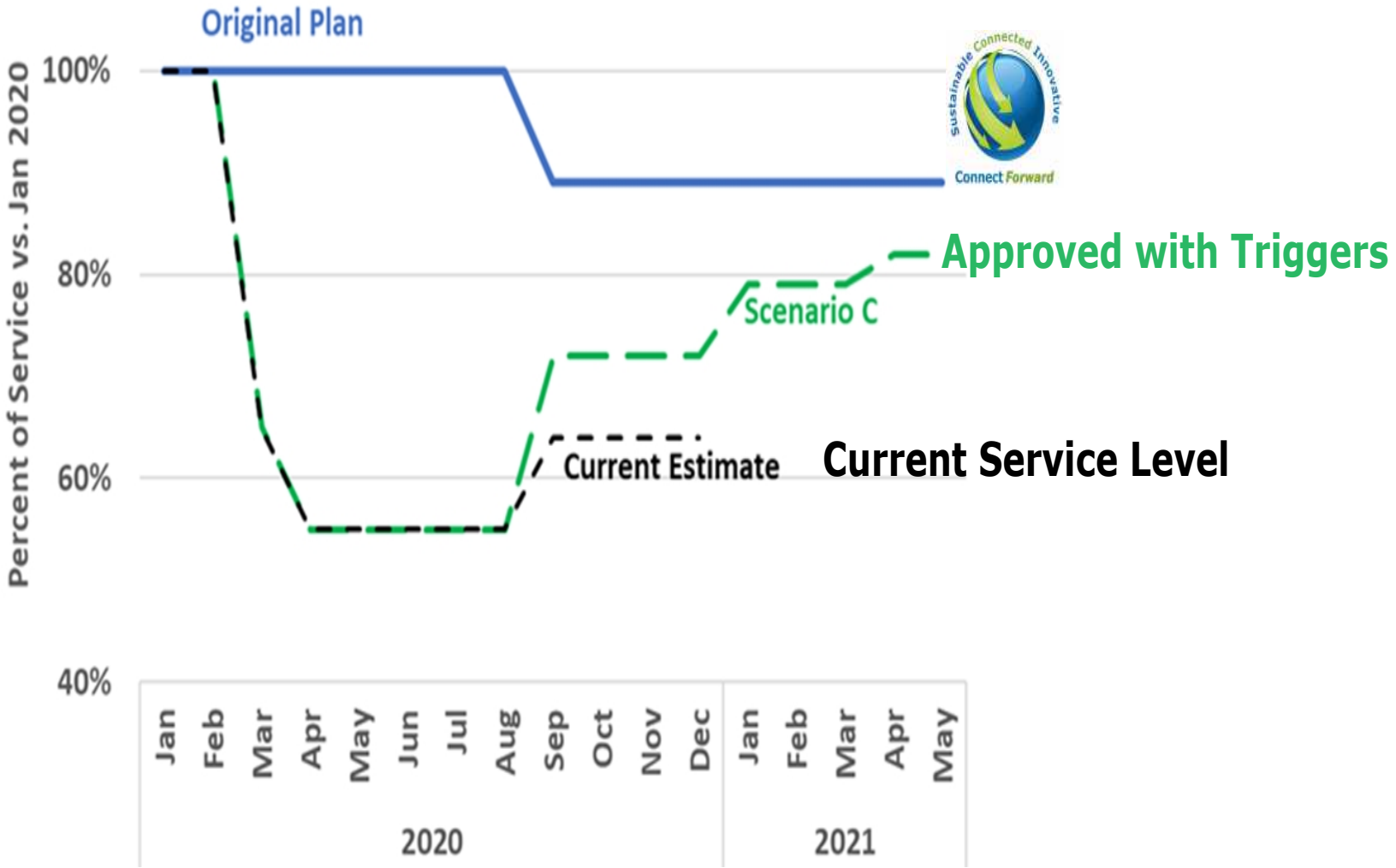
- Adopt revised budget
- CARES Act funding flow
- Monthly reports to Administrative & Finance Committee

Employee Recall Triggers

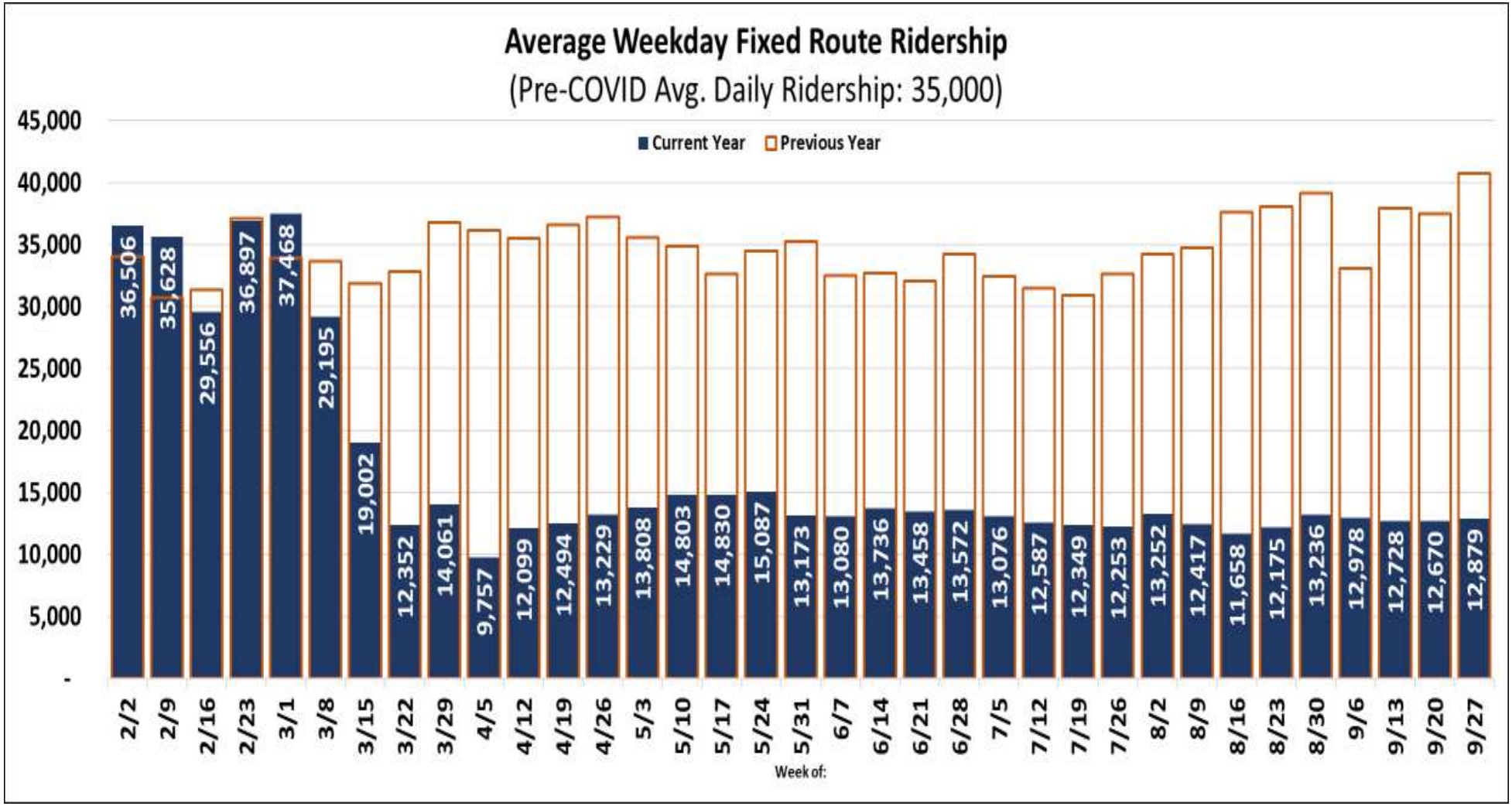
Purpose: Determine when to begin to recall operators and mechanics

- Driven by revenue hours and demand in conjunction with other three triggers
- Aligning workforces with service levels

SERVICE RESUMPTION PATH



TRACKING RIDERSHIP



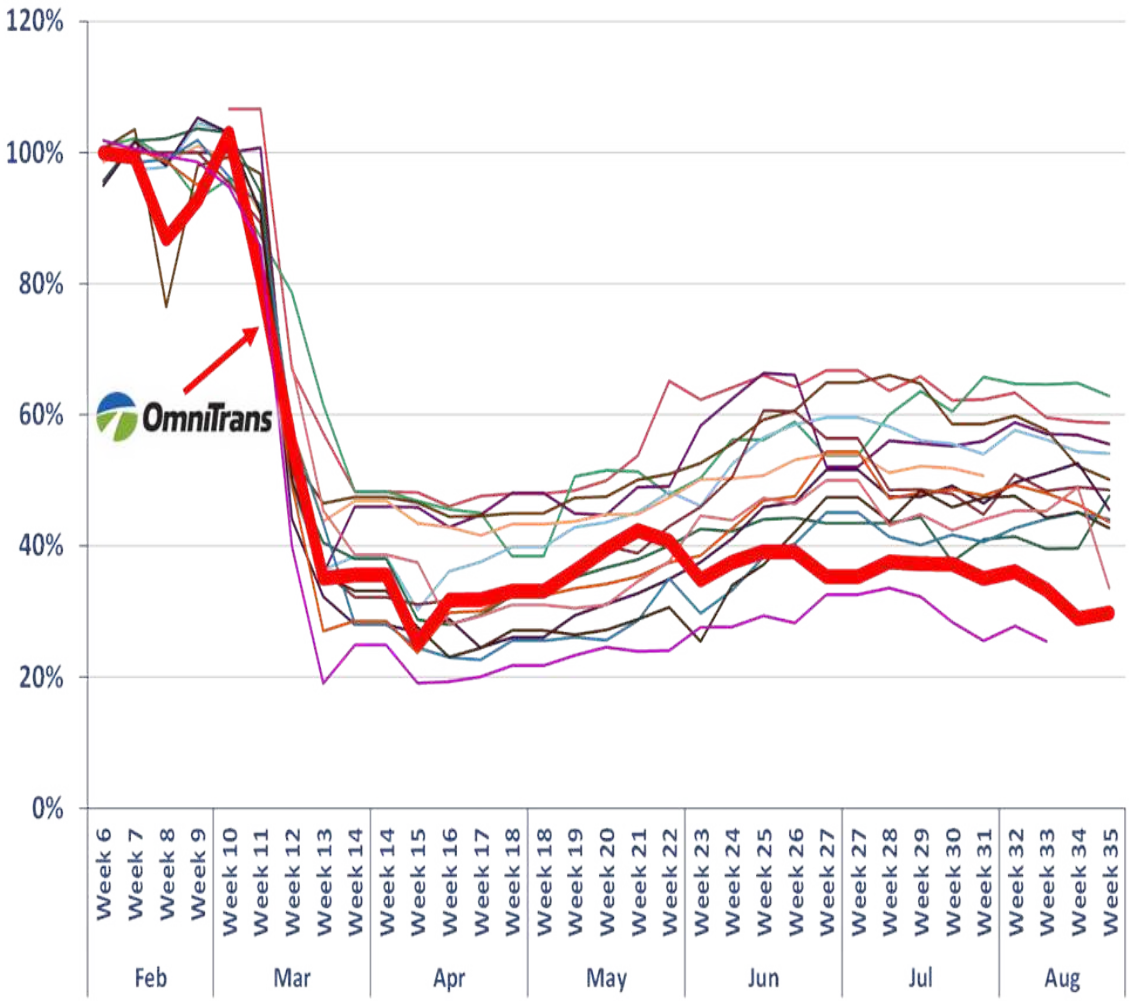
TRACKING RIDERSHIP IN DETAIL

- Evaluating at Service Type, Route, City, Stop Levels
- With September Adjustments have been able to maintain social distancing
- Colleges have announced plans for next semester / quarter

Average Weekday Boardings by City
September 2019 v. 2020

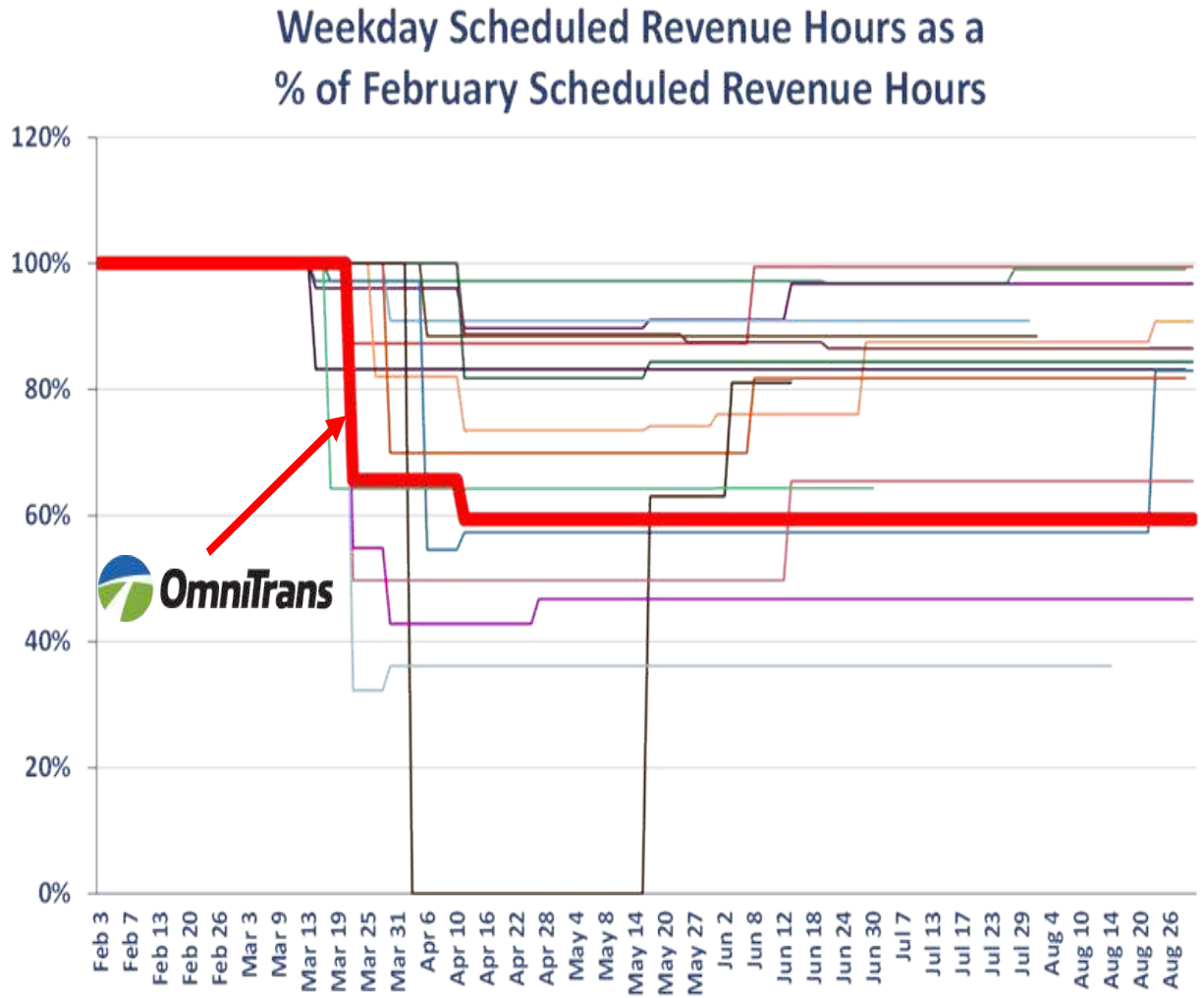
CITY	2019	2020	Δ	%Δ
OTHER UNINCORPORATED	755	122	(633)	-84%
Muscoy	80	15	(65)	-81%
Chino Hills	111	22	(89)	-80%
Grand Terrace	49	10	(39)	-80%
Bloomington	113	29	(84)	-74%
Yucaipa	648	168	(480)	-74%
Rancho Cucamonga	2,283	627	(1,656)	-73%
Upland	992	280	(712)	-72%
Colton	1,803	527	(1,276)	-71%
Redlands	1,238	370	(868)	-70%
San Bernardino	14,646	4,526	(10,120)	-69%
Mentone	48	15	(33)	-69%
Fontana	5,767	1,872	(3,895)	-68%
Rialto	1,819	622	(1,197)	-66%
Chino	911	313	(598)	-66%
Loma Linda	795	274	(521)	-66%
Riverside	353	125	(228)	-65%
Ontario	2,800	1,120	(1,680)	-60%
Highland	955	397	(558)	-58%
Montclair	1,675	698	(977)	-58%
Pomona	802	372	(430)	-54%
Total	38,643	12,504	(26,139)	-68%

FIXED ROUTE RIDERSHIP COMPARED TO PEERS
(RIDERSHIP VS. FEBRUARY 2020, SEASONALLY ADJUSTED, ABBG PEERS)



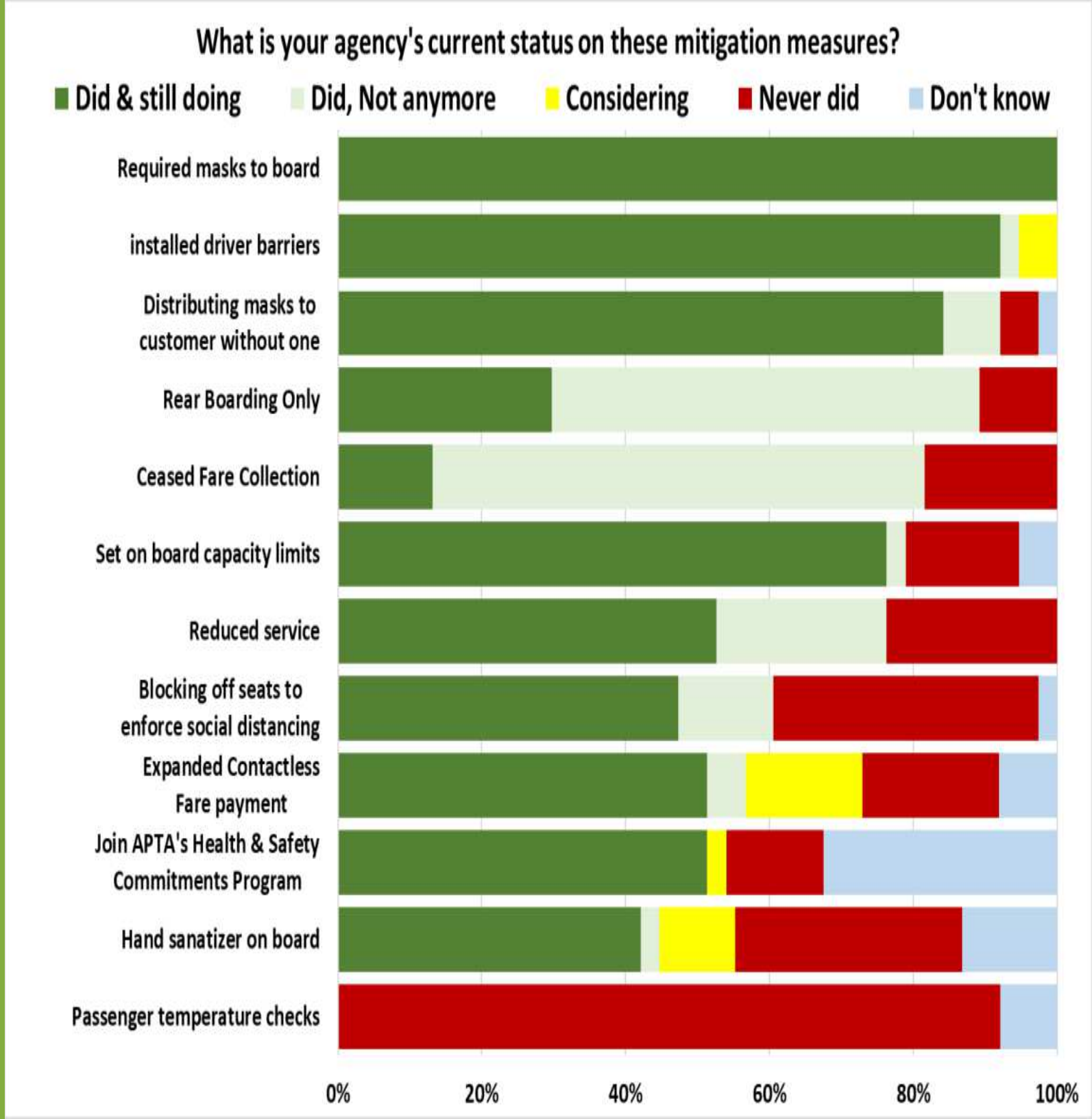
- Generally in line with peers through June
- 1st to resume fare collection
- Likely slower business resumption in CA
- Schools, particularly colleges, haven't reopened
- Similar trend on OmniAccess (-85%)

SERVICE LEVELS COMPARED TO PEERS
(RIDERSHIP VS. FEBRUARY 2020, SEASONALLY ADJUSTED, ABBG PEERS)



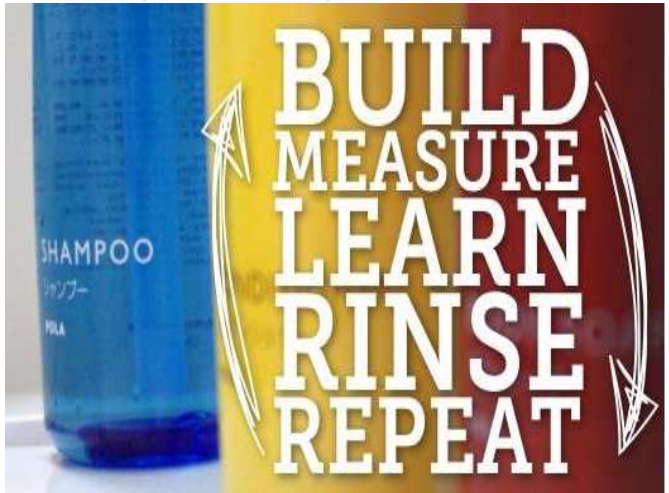
- Reduced service before many peers
- For longer than many peers
- Continuing to align service levels with ridership levels
- Keeping eye on potential long term economic / funding

MITIGATION MEASURES COMPARED TO PEERS



WHAT'S NEXT

- Continue to Monitor using Service Resumption Triggers
- Considering longer-term implications if extends through next summer
  - Renegotiate Purchased Transportation Contract
  - More Smaller Vehicles / Contracting
  - Temporary MicroTransit Zones
  - Direct outreach to access riders
  - Impact on FY2022 Budget & Service Plan



THANK YOU